

104
DETERMINATIONS AND FINDINGS FOR THE SPACE
SHUTTLE PROGRAM

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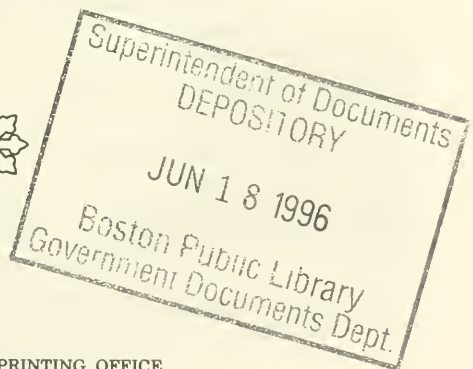
Determinations and Findings for the...

HEARING
BEFORE THE
SUBCOMMITTEE ON SPACE AND AERONAUTICS
OF THE
COMMITTEE ON SCIENCE
U.S. HOUSE OF REPRESENTATIVES
ONE HUNDRED FOURTH CONGRESS
FIRST SESSION

NOVEMBER 30, 1995

[No. 36]

Printed for the use of the Committee on Science



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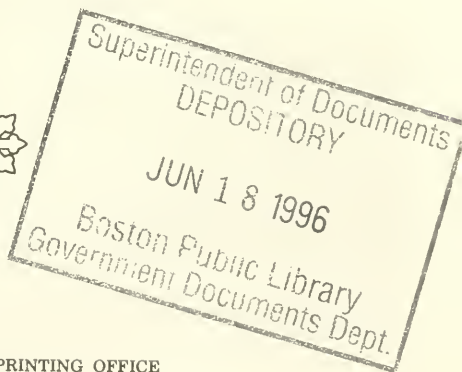
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(III)

DETERMINATIONS AND FINDINGS FOR THE SPACE SHUTTLE PROGRAM

THURSDAY, NOVEMBER 30, 1995

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE,
SUBCOMMITTEE ON SPACE AND AERONAUTICS,
Washington, DC.

The subcommittee met at 10:00 a.m. in Room 2318 of the Rayburn House Office Building, the Honorable F. James Sensenbrenner, chairman of the subcommittee, presiding.

Mr. SENSENBRENNER. The Subcommittee will be in order.

Earlier this year, NASA's Space Shuttle Independent Management Review Team, led by Dr. Christopher Kraft, recommended consolidating shuttle contracts in order to reduce costs.

More importantly, the Kraft report indicated that contract consolidation would improve accountability and help increase shuttle safety.

For these reasons, this Committee has supported consolidation of shuttle operations under a single prime contract and I still support the concept.

However, the process NASA is using to transition into a single prime contract does raise some significant concerns.

On August 21, 1995, NASA held an extensive briefing for industry representatives to discuss the process of consolidating 85 space shuttle contracts under a single prime contractor. Four firms submitted letters of intent to NASA, reporting their desire to be on NASA's proposal to be the single prime contractor. These included some of the most well-known aerospace and management companies in the United States, including Boeing, McDonnell Douglas, the Bamsi Corporation, and the United Space Alliance formed by Lockheed-Martin and Rockwell.

On September 27th, we held a shuttle safety hearing in which NASA delivered a single page of testimony which said nothing more than "trust us." The paucity of information available from NASA in that hearing was shocking, especially since NASA was in the process of studying safety in the context of contract consolidation. That raised concerns that NASA might not have adequately planned to preserve safety. So we decided to have a second hearing.

On November 7th, the NASA Administrator, who is here with us today, gave this Committee just a few hour's notice that NASA was suspending the competition for a single prime contract and would make the award on a non-competitive basis to the United Space Alliance. NASA intends to spend the next year or so negotiating this

contract with the Space Alliance, which we were told became a legal entity only a week ago.

Representatives from the Alliance were verbally invited but declined to testify at today's hearings.

Although NASA's announcements seemed timed to take Congress by surprise, we fortunately scheduled the second hearing on shuttle safety for November 9th, and the NASA witness at that time gave us quite a bit of information about the status of the shuttle program, its restructuring and NASA's goals for maintaining safety during the contract consolidation.

While we appreciate this earlier testimony, I still have some of the concerns about the shuttle program that I expressed three weeks ago.

In general, this Congress supports competition as the primary means by which we produce innovation, reduce costs to the taxpayer, and improve management.

The Committee accepted the need to restructure the shuttle program in order to save money and to improve safety through streamlined accountability, but it is not readily apparent that eliminating competition from the process of selecting a shuttle operator will accomplish these goals.

Certainly NASA has given up any leverage it had in negotiations with the United Space Alliance by going to a non-competitive contract.

We also understand and greatly appreciate Mr. Goldin's effort under the zero-based review to cut costs without reducing programs. But I cannot help but wonder if NASA has attempted to treat the shuttle program as a cash cow which the agency can raid in order to fund other programs.

The speed with which NASA decided to award the shuttle prime contract to an entity that in itself is in the process of being created contributes to this concern. It is not clear that NASA put adequate thought into this process and simple assertions from the Agency that it is acting to serve the national interest do not constitute evidence that NASA is doing the right thing.

When all is said and done, this process of shuttle contract consolidation may not pass the smell test. This does not mean that NASA made the wrong decision or acted improperly.

We don't have enough information to make that determination yet, but the more I have learned in recent weeks, the more questions seem to present themselves.

At this point, the burden of proof rests with NASA. Until Congress is convinced that NASA acted correctly and judiciously in awarding the Agency's single largest operational program to a corporate entity without the benefits of competition, the Federal Government should not go too far down the road in implementing this type of transition.

At this point, I would like to yield the floor to the distinguished ranking minority member, Mr. Hall, for an opening statement.

And without objection, opening statements of other members of the Committee will appear in the hearing record following Mr. Hall's statement.

Mr. HALL. Mr. Chairman, I thank you and I think your opening statement was excellent and pretty well set the stage for the hearing today.

And I want to welcome Administrator Goldin back before the Subcommittee. I think you and the rest of the NASA team have done an outstanding job, and I'm very proud of the job you've done in tough budgetary times, and often confusing budgetary times.

I'd just like for you to know that your efforts are appreciated and look forward to hearing you today.

As you know, we have to evaluate the determination and findings that NASA's submitted to Congress, and we have to focus on your intent, and you're the guy that's got to tell us what that intent is.

This is an opportunity for you to give us the background of how and why you arrived at the conclusion that you did.

Lockheed-Martin and Rockwell International, two partners in the United Space Alliance, have been very supportive of the shuttle program with distinction from the inception of the program.

So we've got a lot going for us, and I have no doubt that they're going to continue to perform in the years ahead.

However, as the Chairman said, the Space Shuttle program is the absolute centerpiece of U.S.-manned space flight program, and is critical to the successful assembly and operation of the space station.

We have to be sure that any changes that are made to the shuttle program do not jeopardize the safe and efficient operation of the shuttle, among other things.

In addition, I think we have to be sure that any contract that's negotiated is both fair to industry and fair to the interests of this government.

I'm a strong believer in the benefits of competition. This is a day and time that this Congress is pushing competition. It eases into almost every discussion we've had; telecommunications and all the other discussions that we've had is competition, and I'm a strong believer in it.

And I think the idea of a non-competitive contract is something that we just have to examine very closely. Now I don't exclude it as being a tool to work with, but I think that being said, you've made some strong arguments in your determination and your findings.

And I hope that today's testimony will address any other concerns that the members might have.

It gets to where you have to reach a matter of trust and two Presidents have trusted you and your guidance and, so far, they've been right.

Back in the old days, Mr. Chairman, my grandmother used to make our clothes, and she always cut a pattern first, and then followed that pattern. Today, I hope we hear how you've cut a pattern and how you've followed it, how you arrived at the pattern, and I thank you for your appearance here today.

Thank you, Mr. Chairman.

Mr. SENSENBRENNER. Thank you very much, Mr. Hall.

[The prepared statements of Hon. Ralph M. Hall, Hon. Dave Weldon, Hon. George E. Brown, Jr., and Hon. Sheila Jackson Lee follow:]

PREPARED STATEMENT OF HON. RALPH M. HALL, A REPRESENTATIVE IN CONGRESS
FROM THE STATE OF TEXAS

Good morning. I first want to welcome Administrator Goldin back before the Subcommittee. I think that you and the rest of the NASA team have done an outstanding job in adjusting to the very tough budgetary times that we face these days, and before we get to the topic of today's hearing, I would just like to let you know that your efforts have been appreciated.

As you know, we have to evaluate the Determination and Findings that NASA has recently submitted to the Congress. That D&F is focused on NASA's intention to seek a non-competitive contract with the United Space Alliance to operate the Space Shuttle. Lockheed-Martin and Rockwell International, the two partners in the United Space Alliance, have supported the Shuttle program with distinction since its inception, and I have no doubt that they will continue to perform as well in the coming years. However, the Space Shuttle program is the centerpiece of the U.S. manned spaceflight program and is critical to the successful assembly and operation of the Space Station. We have to be sure that any changes we make to the Shuttle program do not jeopardize the safe and efficient operation of the Shuttle.

In addition, we have to be sure that any contract that is negotiated is both fair to industry and in the interest of the government. I'm a strong believer in the benefits of competition, and so I think that the idea of a non-competitive contract is something that needs to be examined carefully. That being said, I think that you have made some strong arguments in your Determination and Findings, and I hope that today's testimony will address any other concerns that the Members might have.

Again, welcome Mr. Goldin, and I look forward to your testimony.

PREPARED STATEMENT OF HON. DAVE WELDON, A REPRESENTATIVE IN CONGRESS
FROM THE STATE OF FLORIDA

I want to thank the Chairman for calling this hearing on the Space Shuttle prime contract. I also thank you, Mr. Goldin, for appearing before this committee to explain NASA's decision regarding this most important issue.

I applaud the efforts of NASA to find more efficient and cost-effective ways to operate the Shuttle, and I support exploring initiatives that may save taxpayer dollars. Additionally, I recognize the challenges that NASA faces as we move closer to First Element Launch of the international Space Station. However, as you well know, and as I have expressed in previous hearings, the Space Shuttle is an extraordinarily complex vehicle. NASA must move with extreme caution in any restructuring effort to ensure that safety is not compromised.

Questions have been raised about the process NASA undertook in selecting United Space Alliance (USA) to be the single source contractor for operation of the Space Shuttle. I look forward to knowing fully your reasoning behind this decision.

The outstanding record of success that NASA's Shuttle program has enjoyed is due in large part to the dedication and commitment of the employees of the Processing Team at Kennedy Space Center and at other NASA centers involved in the process. Rockwell and Lockheed-Martin are recognized as two of the most capable companies in the aerospace industry, and we would not have the successful Shuttle program we have today without the outstanding technical skills they each bring to the program. Having witnessed first-hand the amazing successes in the Shuttle program, I have a great deal of confidence in all of the highly trained and effective civil servants and contractors who perform their demanding tasks in the fish bowl of public attention. The technicians, engineers, and managers involved in the launch and operation of the Space Shuttle are to be applauded for their outstanding performance. It is imperative that their experience and dedication to the program not be overlooked as NASA moves toward a new single prime contract and I expect that they will be more involved in the planning and implementation of this transition.

Additionally, I continue to be concerned about the proposed consolidation of Space Shuttle and Space Station operations under the single prime contract. I believe this action would complicate and possibly compromise the transition of the Shuttle operations and should be rejected at this time, and I hope that NASA will do everything possible to ensure that any future contracts for Space Station operations will be fairly competed.

I want to do everything possible to make sure the right decisions are made on behalf of the Space Shuttle program and its employees. I look forward to today's hearing and want to continue working with NASA as the Space Shuttle program as NASA undertakes this significant restructuring of the Shuttle program.

PREPARED STATEMENT OF HON. GEORGE E. BROWN, JR., A REPRESENTATIVE IN
CONGRESS FROM THE STATE OF CALIFORNIA

Good morning, and welcome to Administrator Goldin. I look forward, as always, to hearing your testimony. Today's hearing, which is focused on NASA's Determination and Findings for the Space Shuttle program, will be an important opportunity for Congress to hear what NASA's plans are and to have our questions addressed.

There is no question that the budgetary environment of the last several years has forced NASA to restructure its activities and to seek different ways of doing business. The Space Shuttle program has been a prime example of NASA's willingness to seek cost reductions in its programs, and I think NASA can take pride in the results achieved to date. Nonetheless, we have to be certain that short-term economies are not achieved at the expense of long-term damage to NASA's critical activities.

It is clear that safe and efficient operation of the Space Shuttle is one of those critical activities. As part of its continuing thrust to reduce costs, NASA is proposing to turn over responsibility for most Shuttle operations to a Single Prime Contractor. If successful, such an approach could be a model for other activities currently conducted by the government. However, if unsuccessful, there could be serious negative consequences for the space program. This is the challenge facing NASA and the United Space Alliance. I have no reason to doubt their ability to make this proposed new management structure work. Nevertheless, I think we need to understand what is being planned, and how the continued safe operation of the Shuttle can be ensured under such an approach. I thus look forward to today's testimony.

PREPARED STATEMENT OF HON. SHEILA JACKSON LEE, A REPRESENTATIVE IN
CONGRESS FROM THE STATE OF TEXAS

Good morning Mr. Goldin. Before we begin this hearing, let me commend you on the hard work and innovative thinking that you and your colleagues at NASA have demonstrated. I realize that in these times of tight budgets and rising expectations it is often difficult to find compromises between the conflicting demands placed upon you and the space agency.

Although this committee has oversight responsibility for the National Aeronautics and Space Administration, it is incumbent upon us to allow you a degree of freedom to accomplish your job in the most effective way you can. It is also in the best interest of everyone for us to work together in advancing the cause of science, space exploration and the human condition. To do this however, we must establish a relationship of trust and openness and not allow personal conflicts or unsubstantiated suspicions to cloud our judgment or association.

Having said this however, it is also our responsibility, much like a board of directors, to ensure that the investor taxpayers are getting their money's worth and the company is being captained well. And it is pursuant to this responsibility that we will hear your testimony today. It is for our own peace-of-mind that we must be sure that the decision to award a non-competitive contract for the Space Flight Operations Contract is well thought out and appropriate. I, along with many of my colleagues, have several concerns about this contract and the awarding of it to a single company. Safety is, of course, of the utmost importance, but issues concerning liability, cost, and disadvantaged businesses are looming as well.

Rockwell and Lockheed-Martin, which are part of the recently organized United Space Alliance (U.S.A.) currently have the majority of the shuttle operations contracts, and thus are in a special position. This combination may indeed expedite the transition to a single prime contractor and keep the space station on schedule, but I wonder if this short term gain will result in the long-term success. I am also curious as to how the United Space Alliance expects to cut costs while maintaining safety and exactly what specific role NASA employees will play in the safety process. Further, I am sure this committee would like to hear exactly how much in savings this change is going to create and at what cost to loyal NASA employees. Generally, I appreciate any efforts to ensure more efficiency in this major project and I believe over the long run this may be achieved as our questions are answered. I also believe this approach can be effective with careful oversight.

Finally, because of the importance and timing of this transition to a single prime contractor, it would be my expectation, Mr. Goldin, that this committee will want to follow carefully the developments of this contract and its negotiation, implementation, and its fiscal, safety and operational results.

Mr. SENSENBRENNER. As everyone in the room is aware, the Federal Trade Commission is investigating the antitrust aspects of the United Space Alliance. And in order to gather a complete and factual record that may be of use to the FTC in its investigation of the joint venture between Lockheed-Martin and Rockwell, I'm going to swear Mr. Goldin in.

So could you please stand and raise your right hand.

Whereupon, Daniel S. Goldin was called as a witness herein, and having been duly sworn, testified before the Subcommittee as follows:

TESTIMONY OF DANIEL S. GOLDIN, ADMINISTRATOR, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Mr. SENSENBRENNER. Mr. Goldin, you may proceed.

Mr. GOLDIN. I want to thank you, Mr. Chairman, for the opportunity to appear before this subcommittee and for your leadership in revolutionizing the space transportation system.

I have submitted detailed written testimony, but with your permission, I'd like to give a short, oral statement.

Mr. SENSENBRENNER. Without objection, the full written statement will be included in the record, and you may proceed as you will.

Mr. GOLDIN. Thank you.

I want to start today by making clear to you how much we at NASA value our partnership with this subcommittee and with the full Committee.

For nearly four years and two Congresses with two different chairmen, we've worked together to transform the space transportation system.

We're bringing costs down, we're doing more for less, we're moving appropriate functions into the private sector.

Already we've realized a savings of about one billion dollars a year.

I believe that's a direct result of our partnership. The mutual commitment of this subcommittee and NASA to fashion a space transportation system that makes sense for America. I'm proud of what we're doing together.

I know that some members have expressed concern about the timing of NASA's decision to use other than full and open competition in selecting a single prime contractor.

I want to assure you that I moved to notify the Congress as soon as I accepted the Source Evaluation Board's (SEB) recommendation to me.

I met with the SEB chairman on November 3rd, and on the morning of November 6th. As our course became clear that morning, we set up a meeting for the next day with the leadership of the Science Committee. We met with them on November 7th.

One of the time pressures driving us was that Wayne Little was testifying before this subcommittee on November 9th on related matters.

Realizing the importance of keeping this Committee informed on the status of this important issue, we set up the November 7th meeting to explain our rationale for the sole sourcing.

I want to assure you that we at NASA believe a strong partnership with Congress is in the best interests of the space program, it's in the best interests of the country, and if I have caused any problems in my attempt to communicate with the Committee, I apologize up front.

Let me move on now to the issue at hand. I want to talk a little bit about the direction the shuttle program's been going in.

Since 1992, the Committee and NASA have been steadily cutting shuttle costs while improving performance capabilities. Congress and NASA have taken a hard look at revamping the shuttle program so that it makes sense today, and I would like to point out that an independent assessment of reliability of the shuttle was done by SAIC Corporation and the number that was quoted for a number of years through very recently was based on a study done in 1998[sic] where, on ascent, and for the first few hours on orbit, they calculated a failure probability of one in 78.

Based on the approach we've taken and based upon the upgrades we've made mainly to the shuttle engines, they are now calculating a probability of one in 248. And this is what I talk about when I say, as we've moved along, we have made improvements and we have been conscious of safety.

In fiscal 1994, the House adopted a NASA Authorization Bill that set cost savings goal for the shuttle program. It also encouraged NASA to maintain safety. The bill called for a National Academy of Public Administration review of shuttle costs, deduction goals and procedures.

The December 1994 NAPA report submitted by NASA to the Congress identified possible management actions to help cut costs.

The fiscal 1995 authorization bills passed by the House and Senate directed NASA to evaluate potential management consolidation initiatives and contract incentives to reduce annual shuttle costs.

We were directed to preserve quality and safety. At my direction, the Associate Administrator for Space Flight in August 1994 initiated a shuttle functional work force review. It looked at the minimum work force necessary to safely fly seven shuttle flights a year and establish a base line implementation plan to optimize the shuttle work force while ensuring safety.

We forwarded the findings to Congress in March 1995.

Also in March 1995, the results of the Space Shuttle Management Independent Review Team, under the chairmanship of Dr. Christopher Kraft, were forwarded to the Congress.

The findings of both studies, along with those of our zero-based review, were adopted by NASA this spring to be incorporated in our future budget planning.

I've very gratified by the continuing leadership of this Committee which last month adopted HR 2405 concerning the restructuring of the Space Shuttle Program.

We strongly agree with the emphasis on continued safe operations of space transportation systems. In fact, safety and the desire to stick to our schedule is what drove NASA's decision to use

other than full and open competition in choosing a single prime contractor.

This is the only way we could meet your goals and ours. I deeply believe that this is what's best for the space program, I deeply believe that this is what's best for the country.

My decision to pursue the award of the space flight operations contract to the United Space Alliance was ultimately based on a commitment to maintain shuttle safety and launch Space Station on schedule. It was that simple. We take our commitments very, very seriously.

Of the four companies expressing interest in becoming a single prime, only USA has the necessary experience base and existing operational structure to minimize schedule and safety risks.

If we went with full and open competition, and another, less experienced contractor was selected, this could create very serious problems.

The milestones required to meet the first U.S. space station element launch in late fiscal 1997 began in early calendar 1996. So a new contractor brought on board in September 1996 time frame would have to learn the shuttle program as critical deadlines are passing. That could pose a serious threat to the schedule and that would be expensive. A delay of as much as one or two years could cost two to four billion dollars.

So looking at the SFOC contract in isolation, one could say that it might be the lowest cost approach, but looking at the total human space flight program is the overriding factor that we considered.

Cost isn't the only problem with a schedule slip. We have a commitment to build the station on time, a commitment to this country and our international partners.

Another potential for a schedule problem is that some 28 existing contracts have to be combined. These contracts are held by several companies, and any one of them could refuse to grant the right to transfer to a single prime contractor.

NASA's only leverage would be to terminate such contracts for convenience. This time-consuming process could threaten the schedule for awarding the single prime contract when done in parallel with the competition.

USA now holds 69 percent of the value of shuttle-related prime contracts. Obviously, that would greatly simplify the task of contract consolidation.

More importantly, with the experience and knowledge of the Alliance, the ongoing work would likely continue on schedule with minimal risk to material and institutional commitments.

Safety is also a concern. An inexperienced contractor team working to unrealistic schedules could negatively impact safety.

Let me close with two final points.

I know there's some concern about the role of space flight operations contract in the Space Station program. There's also some concern about the SFOC contract on the commercialization of space.

First, this does not change in any way the role responsibility or authority of the Space Station program in managing either the station development or operations.

The Space Station program will give the prime contractor requirements. The contractor will then implement them in the form of mission planning, training and support of mission execution.

All decisions on matters dealing with our international partners and science and technology work on the station are still made by NASA.

This is the way we do business now. This is the way we'll continue to do business under the new contract. NASA calls the shots; USA does not.

Second, the contract will in no way impact the commercialization and development of space. USA would be responsible for supporting the station only in the training, flight preparation, and execution of what's needed to operate the station.

The Alliance would have no connection to the research done aboard the station or the product development that may come out of that.

These would be decisions made by industry scientists and technologists. In fact, as shown in Attachment Six, and I have this as the first chart on the board here, 80 percent of all Space Station funds would be available for some form of competition commercialization or privatization in 2002.

And if you see that one wedge there, which I believe is 14 percent of the overall Space Station contract, that is the portion of the operations held by the potential SFOC contract.

And if we wanted to compete that portion, we'd have to compete the whole SFOC contract. And this is Chart 6 in my formal submission to you.

We will closely monitor the performance of the SFOC contractor. If we determine that it's in the best interests of the public, we will take action to recompetete this contract at approximately the end of Space Station assembly time frame.

If you go to the next chart, please? As shown by Attachment Seven in my written statement, and the next chart up here, 84 percent—now we have the shuttle plus the station—84 percent of the human space flight and related science budget will be competable in 2002. And I know members were concerned that we may be going down a path that would preclude competition in the future.

Mr. Chairman, distinguished members, I believe this is the right way to go. It's our best offense against schedule slips, unnecessary expense, and threats to safety.

Full competition is often the right choice, but not at this time.

We worked through an orderly process to arrive at this decision, and we came to you as soon as it was made. This is our best judgment, our best estimates of the tradeoffs and consequences of either course.

In some ways, it would have been easier to use full and open competition, and then bureaucratically throw our hands up if deadlines were missed, and say, well, we slipped the Space Station because we had to wait for competition.

But in my view, that would not be wise, it would not be in the best interests of the country, and it gives you the opportunity to hold our feet to the fire and have no excuses.

I want to thank you again, Mr. Chairman, for your leadership in holding this hearing. I want to thank you for your determination to give the American public the best value for its dollar and the space program it deserves.

I look forward to answering any questions.

[The prepared statement of Administrator Goldin follows:]

Statement of

Daniel S. Goldin
 Administrator
 National Aeronautics and Space Administration

before the

Subcommittee on Space and Aeronautics
 Committee on Science
 House of Representatives

November 30, 1995

Mr. Chairman and Members of the Subcommittee:

I am here today to address in detail the rationale for NASA's decision to use other than full and open competition in selecting a single prime contractor to consolidate existing Space Shuttle related contracts. I would also like to respond to any questions Members of the Committee may have regarding the implications of the resulting Space Flight Operations Contract (SFOC) relative to the International Space Station, particularly regarding operations of the Space Station and opportunities for commercialization.

Background

Mr. Chairman, our mutual interest in reducing the costs of the Space Transportation System, while preserving safety, is reflected in a history of cooperative efforts among the Administration, NASA and the Congress, and, in particular, this Committee. Since 1992, the NASA Shuttle Program has reduced the costs of operations while improving performance and capabilities. A variety of cost reduction measures--including management efficiencies and elimination of obsolete or marginally effective tasks and requirements--has produced program savings to date of approximately \$1 billion per year while maintaining safety.

- o In FY 1994, the House adopted a NASA authorization bill which established cost savings goals for the Space Shuttle program, while encouraging NASA to accomplish those savings in a way that would not have a negative effect on safety. The bill also called for a National Academy of Public Administration (NAPA) review of Space Shuttle Costs, Reduction Goals and

Procedures. The December 1994 NAPA Report submitted by NASA to the Committee identified a series of possible management actions to help reduce costs.

- o In FY 1995, the House- and Senate-passed NASA authorization bills included an identical provision entitled, "Space Shuttle Cost Reduction Initiatives," which called for an examination by NASA to evaluate potential management consolidation initiatives and contract incentives to be used to reduce the annual cost of the Space Shuttle program while preserving quality and safety.

In view of the pace of the reductions NASA had been accomplishing, the Associate Administrator for Space Flight, at my direction in August 1994, initiated a Shuttle Functional Workforce Review to identify the minimum workforce necessary to safely fly seven Shuttle flights per year and to establish a baseline and implementation plan to optimize the Shuttle workforce while ensuring safety. The findings of this review were forwarded to the Committee in March 1995. Also in March 1995, the findings of the Space Shuttle Management Independent Review Team, under the chairmanship of Dr. Christopher Kraft, were forwarded to the Committees. The Report recommended that NASA consolidate all program operations under a single business entity, such as a single prime contractor.

The fundamental premises of this recommendation are:

- separation of the operations functions from the development activities within the program;
- elevation of the NASA-contractor interface to the program level to disengage NASA daily operations activities and empower the contractor to assume this responsibility; and,
- development of a contract structure to incentivize the contractor to reduce operations while maintaining safety of flight and mission success.

The findings of both the Shuttle Functional Workforce Review and the Space Shuttle Management Independent Review Team were adopted by NASA in the spring of 1995 and the Shuttle program began preparation for contractor consolidation. Consistent with this objective, NASA, in August 1995, held a briefing for industry on the Agency's Shuttle Program restructuring, obtaining responses in September.

I am grateful for the continuing leadership of this Committee, as reflected in H.R. 2405, adopted in October 1995, concerning the restructuring of the Space Shuttle program, particularly the direction that, as NASA moves toward a single prime contractor, the Agency give priority to continued safe operation of space transportation systems.

Scope of the Space Flight Operations Contract (SFOC)

The Space Shuttle program, in many areas, has matured and requires less Government involvement in the day-to-day activities than during the design and development and early phases of operation. Due to design changes being made to improve safety, design changes required by environmental regulations and parts obsolescence, and design changes required to meet Space Station requirements, other areas of the program still require today's level of Government management and oversight. It is our intent, in establishing the SFOC, to consolidate all mature operational areas of the program and associated contracts under a single prime contractor. As the ongoing design and development work is completed, those projects would also be incorporated into the SFOC. The transition to a restructured Shuttle program will be carefully planned and controlled to insure safety.

The Space Flight Operations Contract will be managed by a NASA program office which will be fully responsible for assuring that the contractor meets all fiscal and technical responsibilities contained within the contract. There will be no change in overall Government responsibility for the Space Shuttle program and no Government assets will be transferred to the contractor at this early stage. The Government will give the contractor more responsibility for day-to-day operations and the contractor will manage some contracts presently managed by NASA, while not displacing NASA's responsibility for formulating policy, establishing program priorities, providing technical direction, or performing safety and mission-assurance related insight and audit functions. The Government will maintain sufficient audit and surveillance to assure that contract conditions and requirements are met and that safety is maintained. The Government will also conduct independent technical assessments of technical issues and have sufficient technical insight into the program to support critical program decisions. The Associate Administrator for Space Flight will still chair each Flight Readiness Review Board and will be the final authority for commit to flight.

In making these program changes, NASA is increasing the content and scope of work being performed by the private sector. In doing so, we are increasing our contracting out, which we regard as a subset of privatization (Attachment 1). In making this contract consolidation, we are also posturing the program for possible future transfer of responsibility for providing these services to the private sector. As a part of our Request for Proposals, we will request that the Space Flight Operations Contractor submit concepts for eventual privatization of all or parts of space flight operations, consistent with direction included in H.R. 2405. We are prepared to support this potential change as long as safety can be assured and Government requirements can be met. However, industry must be willing to accept increased responsibility and liability for the assets. In addition, existing Government restrictions on the use of Shuttle must be changed. As you know, NASA is pursuing the next generation of launch vehicle with private industry. This vehicle, which we envision to be a commercial system, could significantly influence our plans.

Existing contracts will be phased into the SFOC. Those contracts which are currently held by the two United Space Alliance contractors will be consolidated in phase one (Attachment 2). A second group of contracts, also considered to be operational but held by other contractors, would be addressed in phase two (Attachment 3). These two groups of contracts include logistics, vehicle integration, launch preparation, launch execution, post launch processing, and systems, facilities and equipment operation at the Kennedy Space Center. At the Johnson Space Center, systems and cargo integration, training, flight preparation, flight operations systems and equipment, flight crew systems support and International Space Station program support are included. The third phase would incorporate contracts which still have significant ongoing development (Attachment 4). These include the Space Shuttle Main Engine, External Tank, Redesigned Solid Rocket Motor, and flight software contracts. Other development work will be completed and the resulting hardware incorporated into the program. (The lists of contracts reflected in Attachments 2-4 are subject to change, based on ongoing Source Evaluation Board discussions.)

NASA recognizes that the Congress shares the priority which NASA places upon safe operation of the Shuttle. Dr. Wayne Little discussed our approach to maintaining safety as we move to the SFOC during the Subcommittee's hearing on November 9. We will continue to use the management, communication, and independent reviews incorporated following the Challenger accident which have served the program so well in recent years. We will maintain or strengthen audit and surveillance of the contractor's activities and will continue to have detailed technical insight into program areas as necessary to insure safety. We will maintain established metrics which reflect program health and provide indicators of potential safety concerns. We will also add metrics to monitor the transition process in establishing the single prime contractor. In addition, we will establish an award fee structure which emphasizes safety as our first priority.

SFOC Role in Space Station Operations

Some concern has been expressed regarding the role of the SFOC in the Space Station program, particularly with respect to Space Station operations. First, this contract does not change, in any way, the role, responsibility, or authority of the Space Station program in managing either Space Station development or operations. No part of the current Space Station contract with Boeing will be included in the single prime contract. The Space Station program provides requirements to the new prime contractor. The contractor implements the requirements in the form of mission planning, training, and support of mission execution (mission execution is a Government responsibility). All decisions on matters dealing with our international partners (including launch vehicle mix) and science and technology work to be done on Space Station are still made by NASA.

The Space Station program will manage all aspects of Space Station operations. During real-time operations, the Space Station Mission Management Team (MMT),

chaired by the Space Station program manager, is fully responsible for program decisions related to Space Station mission operations. During joint Space Station/Shuttle operations, the Space Station MMT and the Shuttle MMT will meet jointly and be co-chaired by the two Program Managers. The Boeing contractor representative will be responsible for all U.S. assembly hardware/software and overall Space Station systems engineering and integration.

The Space Station work which will be included in SFOC is currently included primarily in the Rockwell Space Operations Contract at JSC. (A relatively small amount of work currently performed by two institutional contracts for Space Station will also be included). This work was won competitively by Rockwell and later consolidated with a similar Shuttle contract to Rockwell to attain significant savings. The work is largely synergistic between Shuttle and Space Station, and the on-orbit operations for Shuttle and Space Station will be conducted from a single control center at JSC. However, the Space Station work is done based on Space Station provided requirements. This work for Space Station includes training, flight preparation, flight crew equipment, planning and mission operations, launch package/increment management, cargo integration, and other support tasks required by the Space Station Program Office.

The majority of the work currently managed by the Space Station program is not included in the SFOC. This includes hardware and software development, testing and integration, systems engineering and integration, logistics and maintenance, sustaining engineering, launch preparation, international partner interface, manifesting/assembly sequence decisions, Space Station utilization, analytical and physical integration of payloads, and logistics carriers. Except for the development and integration work, which will be finished, much of this work can be completed at the time of completion of the assembly of Space Station (2002).

Contractor Selection for the SFOC

My decision to pursue award of the SFOC to the United Space Alliance was ultimately based on NASA's commitment to launch Space Station on schedule and to maintain safety. A competitive process for selecting the prime contractor would likely produce the lowest cost for the SFOC. However, we could not view the SFOC award in isolation from other factors. The total cost to the Government could be significantly greater if, as a result of an inexperienced contractor team, we suffered a significant schedule slip to the Shuttle and to Space Station assembly. There would also be serious major impacts to our international partners if we did not meet our schedule commitments. Finally an inexperienced contractor team working to unrealistic schedules could impact safety.

We recognized when we initiated the selection process that NASA might need to use other than full and open competition to establish a single prime contract. However, we wanted to compete the award if we could establish that: 1) viable competitors were available and interested in competing for the contract; and, 2) we could compete the contract without detrimental impacts to the Shuttle or Space Station programs. Therefore, we initiated a process which could result in a competitive

procurement, but which would include a full evaluation of capabilities of potential proposers who could be successful in the environment of an ongoing program with national and international commitments and perform to a predetermined and ambitious schedule.

To initiate this process, we formed a Source Evaluation Board (SEB) chartered to pursue all activities required to select a single prime contractor for the Space Shuttle program. We directed the SEB to include an interim evaluation of the capabilities of potential offerers to be successful, without compromise to critical program commitments or safety. This evaluation would be used to make a final decision relative to full and open competition. The Source Evaluation Board chairman and the Associate Administrator for Space Flight made a decision to solicit pertinent information from potential offerers to aid the SEB in making this critical recommendation to NASA management. To implement this decision, the SEB published a sources sought synopsis for the Space Flight Operations Contract in the Commerce Business Daily (CBD) on August 21, 1995. This announcement requested that potential offerers submit statements of interest in becoming the prime contractor along with specific information to allow the required evaluation. This information included: 1) statement of capabilities; 2) preliminary concepts for accommodating certain given principles for contract consolidation; 3) preliminary concepts for a safe transition from the current management structure to a single prime contractor; and, 4) preliminary concepts for eventually privatization of all or parts of Space Flight Operations. The CBD announcement also provided opportunities for oral presentation by the prime contractor candidates. A summary of the information requested is provided as Attachment 5.

In parallel with the CBD announcement, the Associate Administrator for Space Flight and the Space Shuttle Program Director conducted an open formal industry briefing on August 21, 1995, at the Johnson Space Center in Houston, Texas. At this briefing, the Associate Administrator and Program Director presented: 1) an overview and status of the Shuttle program; 2) principles to be followed in restructuring the program; 3) a status of the implementation of restructuring; 4) principles for contract consolidation to a single prime contract; 5) the planned approach for contract consolidation; and, 6) a discussion of transition from the current structure to a single prime contract. The contents of the CBD were reiterated and industry was invited to respond.

In response to the above outlined Government requests, four contractors (BAMSI, United Space Alliance, Boeing and McDonnell Douglas) submitted responses indicating their interest in responding to a Request for Proposals (RFP) to become the single prime contractor for Space Shuttle operations. All the contractors provided the information requested for evaluation. Following initial evaluation of the responses, the SEB heard oral presentations from the three contractors who indicated a desire to present to the board (Boeing declined), and subsequently had discussions with all four contractors.

The SEB, in parallel with their development of a Request for Proposals, evaluated the data provided by the contractors beginning in late September 1995. Based on this evaluation, the board chairman made a recommendation to me, that NASA should pursue an award to the United Space Alliance, a proposed joint venture between Rockwell International and Lockheed Martin Corporation. The essential rationale for the recommendation made to me is summarized as follows:

- 1) NASA has commitments to the American people, to Congress, the Administration, and its international partners (Russia, Japan, Canada, and the European Space Agency) to design, develop, and assemble the International Space Station on schedule.
- 2) The Space Shuttle is pivotal to making the International Space Station a success. The Shuttle must continue to operate safely and efficiently for NASA to succeed in assembling the ISS by the year 2002. To achieve our commitment, the Shuttle must accomplish a number of important tasks in a very tight timeframe. The first and perhaps most critical task is to conduct the first Space Station element launch in late 1997. Milestones required to meet this first U.S. launch begin in early 1996. These milestones cover a full range of preparation for the initial and subsequent assembly flights. In addition, we have a full slate of planned Shuttle flights during this period including five additional docking missions with the Russian Space Station Mir to complete the phase one Space Station activities.
- 3) The schedule for selection of a single prime contractor reflects a contract award in the September 1996 timeframe. This allows a very short period of time for transition prior to the first required Shuttle launch of Space Station hardware, and overlaps critical milestones to prepare for and accomplish this launch.
- 4) To complete the consolidation required, some 28 existing contracts must be combined. These 28 contracts are held by several companies, any of which could refuse to grant the right of transfer to the single prime contractor. NASA's only leverage, in this case, would be to terminate such contracts for convenience. This process could require complex and time consuming effort in parallel with the single prime procurement which could further threaten the schedule for awarding of the single prime contract.
- 5) A competitive contract award by September 1996, as planned, would require a new contractor to learn the Shuttle program while critical program milestones would be occurring. Once selection had occurred, only current contractors would have the necessary experience base to meet critical schedules without significant schedule risk. A new contractor would also increase safety risks in making the transition in the relatively short period of time available.
- 6) Of the four companies expressing interest in assuming the role of the

8.

6) Of the four companies expressing interest in assuming the role of the single prime contractor, only the United Space Alliance (USA) has the necessary experience base and existing operational structure to minimize schedule and safety risks. This proposed alliance presently holds 69 percent of the value of the Shuttle-related prime contracts which would greatly simplify the task of contract consolidation. More importantly, with the experience and knowledge of the two contractors forming the alliance, the ongoing work would likely continue on schedule with minimal risk to material and institutional commitments.

7) The desire on the part of the Administration and Congress to streamline NASA's budget and reduce costs as quickly as maintaining safety will allow.

8) A schedule slip of as much as one to two years could cost \$2.0 to 4.0 billion would likely result from an alternative approach, and would in all likelihood dwarf any potential savings.

Under the circumstances cited above, I concluded that the benefits of contracting directly with USA outweighed any benefits from competition. The final events leading to this decision were fast paced. I met with the Source Evaluation Board Chairman on Friday, November 3, and again on Monday, November 6. It became apparent that my decision was leaning heavily toward a non-competitive award. Recognizing that Dr. Wayne Little was scheduled to testify before the Subcommittee on November 9 on related matters, and realizing the importance of keeping this Committee informed on the status of this important issue, we arranged on Monday, November 6, to meet with the Committee leadership to explain our rationale for non-competing the contract. After we met on Tuesday, November 7, I signed the Determination and Findings (i.e., for other than full and open competition) and forwarded the document, as required, to the House and Senate leadership with copies to NASA's Committees of jurisdiction. Mr. Chairman, I would like to apologize that this rapid sequence of determinations resulted in less advance consultation with the Committee than both NASA and the Committee would normally expect.

The principal overriding benefit of a non-competitive award to USA lies in maintaining a skilled and knowledgeable contractor workforce which will minimize safety risk for the Shuttle and schedule risk for Space Station. We will obtain a contract which results in cost savings to the Government by applying a disciplined approach to contract definition and negotiation. Savings can be attained by consolidating contracts, focusing contract management, reducing requirements, decreasing Government involvement in day-to-day operations tasks, streamlining NASA contract management, and eliminating overlapping work between existing prime contractors. Significant savings can be achieved without competition by careful definition of required changes and negotiations led by a NASA team with full and complete understanding of the existing program. We intend to pursue the contract with the same discipline and rigor that would have been

applied in the competitive environment. To this end, NASA and the USA must accomplish the following tasks:

- 1) Both parties must agree on a Management Plan and a detailed Statement of Work which adequately describes what the Space Flight Operations Contract must do in performance terms. We expect to complete this by early January 1996.
- 2) USA must prepare definitive management, technical and cost proposals which are responsive to the Statement of Work. These proposals must contain specific plans and commitment to reduce costs while meeting schedules, and, above all, maintaining safety. We expect the proposals for the initial set of contracts to be consolidated to be available by early March 1996. This initial set of contracts will be those operations-related contracts already held by the two USA partners. Additional contracts will be phased into the single prime contract over time based on a schedule to be provided as a part of the Request for Proposals.
- 3) NASA must evaluate the USA proposal, capture its strengths, and eliminate its weaknesses in an agreed-upon contractual document with appropriate fee structure to meet program priorities of flying safely, meeting manifests, and reducing costs. While we plan to award this contract in the September 1996 timeframe, the actual award will depend upon the pace of negotiations.

Future Competition:

Significant opportunity exists for future competition in the operation and utilization of Space Station and the Space Shuttle. By the time of completion of Space Station assembly, the majority of the Space Station budget will be available for competition. Attachment 6 shows the relative portion of Space Station funds in 2002 which are expected to be devoted to the SFOC, residual development by the Space Station prime contractor, science and technology, and other operations functions, such as logistics and maintenance, sustaining engineering, launch site processing, and utilization. As shown in Attachment 6, approximately 80 percent of all Space Station funds would be available for some form of competition, commercialization, or privatization. Space Station funds provided to SFOC would only be competeable if the total SFOC is competed.

At the same time, the SFOC would be at the end of its initial contract period (although options would be available to be exercised). This contract could be competed at that time, or, if conducive circumstances exist, portions or all of that work could be privatized or commercialized by private industry. We will monitor the performance of the selected SFOC contractor and, if we determine that circumstances warrant, we will take action to compete this contract. We believe, based on our recent assessment of potential sources for the SFOC, other companies have the capability to perform the required work, given the time to fully understand

the program, establish the required technical and management team, and make the necessary transition. To illustrate the total competition opportunities available in 2002, Attachment 7 shows the portion of the total Human Space Flight budget potentially available for competition in 2002.

Conclusion:

Mr. Chairman, I believe our decision to use other than full and open competition to negotiate a single prime contract with United Space Alliance is in the public interest, and we seek your support in that endeavor. We also conclude that the new SFOC will have no negative impact on the Space Station program and will not impair the ability of the program to manage and conduct Space Station operations. Further, we plan to compete Space Station operations such as utilization, payload integration and processing, and logistics carrier processing, near the time of completing Space Station assembly and believe this will provide opportunities for commercialization and privatization. As noted earlier, a significant portion of Space Flight budget (including SFOC) is available for competition at that time should circumstances warrant.

Mr. Chairman, that concludes my prepared remarks. I would be pleased to respond to any questions which you or other Members of the Subcommittee may have.

DEFINITION OF TERMS**Privatization**

Generally, the transfer to the private sector of responsibility for providing ongoing, necessary services or functions currently being provided by the Government for itself and others through in-house labor and property resources. When the Government transfers to the private sector the responsibility for services or functions performed by the Government for the sole benefit of the Government, the transfer is referred to as Contracting Out, a subset of privatization.

Commercialization

The employment of private sector financial and other resources to provide goods and services which can meet Government requirements as well as those of a substantial number of other customers. Because the Government is neither the sole nor the predominant customer, it neither dictates specific design or operational parameters, nor bears more than its proportionate share of development or overhead cost.

Privatization or Commercialization Process

If the process of privatization or commercialization of a given service or process requires the use, transfer or divestiture of Government assets by or to a private sector entity, issues such as legal authority for such use of transfer, liability for or flowing from the private use of the assets, minimization of unfair competitive advantage occurring as a result of such actions, and valuation of the assets involved and costs avoided by the Government must be addressed before the process can proceed.



PHASED APPROACH

•PHASE I:

- NAS9-14000
- NAS9-19000
- NAS9-18994
- NAS9-18000
- NAS9-13300
- NAS7-300F
- NAS9-13350
- NAS9-16503
- NAS9-13662
- NAS10-10900
- NAS10-12200

ROCKWELL/ORBITER PRODUCTION
ROCKWELL/SHUTTLE CONSOLIDATED (INTEGRATION)
MARTIN MARIETTA/PYROTECHNIC INITIATOR
CONTROLLER
ROCKWELL SPACE OPERATIONS
CONTRACT/(MISSION OPERATIONS @ JSC)
ROCKWELL/PALMDALE FACILITY
ROCKWELL/PALMDALE
ROCKWELL/FACILITY ACQUISITION
ROCKWELL/FACILITY
ROCKWELL/FACILITY USE
LOCKHEED/SHUTTLE PROCESSING
CONTRACT (KSC)
ROCKWELL/LOGISTICS

This list of contracts is subject to change based on ongoing Source Evaluation Board discussions.



PHASED APPROACH

•PHASE II:

- NAS9-17540	BOEING/FLIGHT CREW EQUIPMENT PROCESSING CONTRACT (FEPC)
- NAS9-18194	BOEING/FEPC FACILITY
- NAS9-19206	HAMILTON STANDARD/WASTE SYSTEM
- NAS9-18576	LORAL/PROGRAM COMPLIANCE ASSURANCE AND STATUS SYSTEM
- NAS9-18983	LORAL/DATA PROCESSING SYSTEM/SIMULATOR INTERFACE DEVICES MAINTENANCE
- NAS9-18800	JOHNSON ENG./FACILITY MAINTENANCE AND OPERATIONS (JSC)
- NAS8-36300	UNITED SPACE BOOSTERS INC (USBI)/SOLID ROCKET BOOSTER
- NAS8-32233	USBI/FACILITY
- NAS10-12000	EG&G/DELUGE & CRAWLERWAY OPERATIONS AND MAINTENANCE

This list of contracts is subject to
change based on ongoing Source
Evaluation Board discussions.

Attachment 3



PHASED APPROACH

•PHASE III:

- NAS9-18817	LORAL/FLIGHT SOFTWARE
- NAS8-40000	ROCKETDYNE/SPACE SHUTTLE MAIN ENGINE (SSME)
- NAS13-614	ROCKETDYNE/SSME TESTING
- NAS8-36200	MARTIN MARIETTA/EXTERNAL TANK
- NAS8-38100	THIOKOL/REUSABLE SOLID ROCKET MOTOR
- NAS8-39236	ROCKETDYNE/FACILITY
- NAS8-39243	MARTIN MARIETTA/FACILITY
- NAS8-38680	THIOKOL/FACILITY

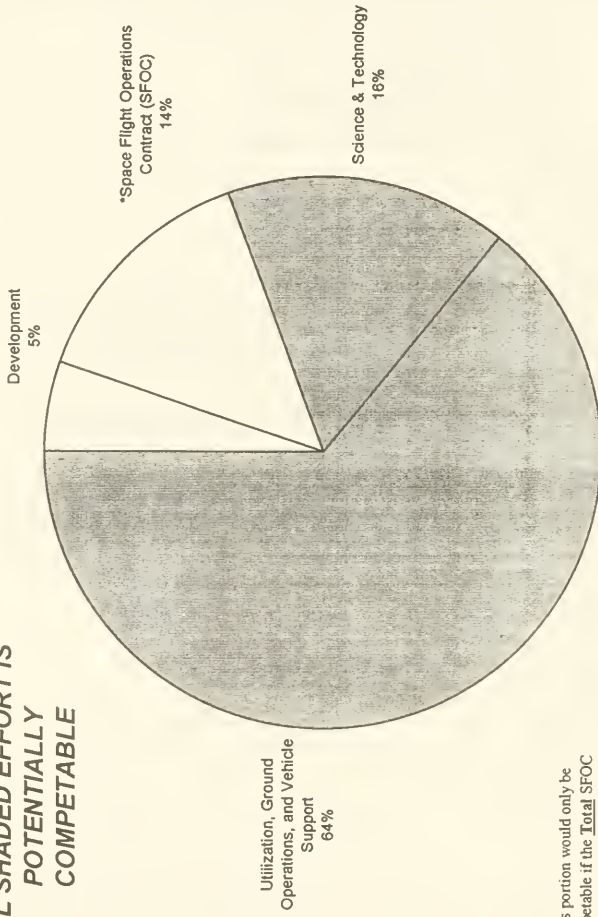
This list of contracts is subject to change based on ongoing Source Evaluation Board discussions.

INFORMATION REQUESTED FROM INDUSTRY IN THE SOURCES SOUGHT
SYNOPSIS FOR THE SPACE FLIGHT OPERATIONS CONTRACT

- NASA is seeking to identify sources for the Space Flight Operations Contract
- Interested firms should submit Indications of Interest in writing to reach the address below no later than 4:00 p.m. Central Time on September 11, 1995:
 - Mr. Walker Lee Evey
 - Code GP-12, Marshall Space Flight Center
 - Huntsville, Alabama 35812
 - Attn: Space Flight Operations Restructure
 - FAX Number: (205) 544-8353
- Written responses should include the following (25 page maximum):
 - Company Name
 - Company Description (Small or Large Business, 8(A), Small Disadvantaged)
 - Address
 - Name and Title of Point of Contact
 - Phone Number
 - Fax Number
 - Internet Address, if available
 - Company size (both approximate number of employees and approximate average yearly dollar sales for work of the type contemplated in this contract)
 - Identify the number of contracts for work of comparable technical and management complexity currently held by the firm within the past 10 years which exceed \$100 million in dollar value
 - Identify the dollar value of the largest contract performed by the firm within the past 10 years which contains work of a nature similar to and comparable in complexity to the contract contemplated here
 - Whether company is interested in prime and subcontractor opportunities
 - A Statement of Capabilities of the firm with regard to accomplishing work of this size and nature (managing and performing operations and program integration as a single prime contractor for Space Flight Operations). Specifically, and provide examples in sufficient detail to allow a reasonable determination to be made of:
 - Past Experience
 - Technical Capabilities
 - Personnel Resources
 - Management Resources
 - Facilities and Equipment Resources
 - Financial Resources
 - A Statement of Interest in managing and performing operations and program integration for Space Flight Operations as a single prime contractor
 - Preliminary Concepts for Accommodating "Principles for Contract Consolidation/ Single Prime Contract: (Reference: August 21, 1995, briefing)
 - Preliminary Concepts for a Safe Transition from the Current Management Structure to a Single Prime Contract
 - Preliminary Concepts for Eventual Privatization of All or Parts of Space Flight Operations
 - A list of key issues or concerns for which your firm desires additional information or clarification which would be helpful in preparing a formal proposal for this work
 - NASA is tentatively contemplating a viewing period at each of the involved Centers. Please state any desire for site visits or other information-gathering. Any additional comments, recommendations, or statements of capability which would be particularly helpful in preparing a formal proposal
 - Any additional comments, recommendations or statements of capability which would assist NASA in the assessment of your firm's capabilities, preparation of a solicitation, and/or the conduct of a competitive procurement are solicited
- Oral presentations will be arranged upon request from prime contractor candidates

**INTERNATIONAL SPACE STATION
FY 2002 BUDGET**

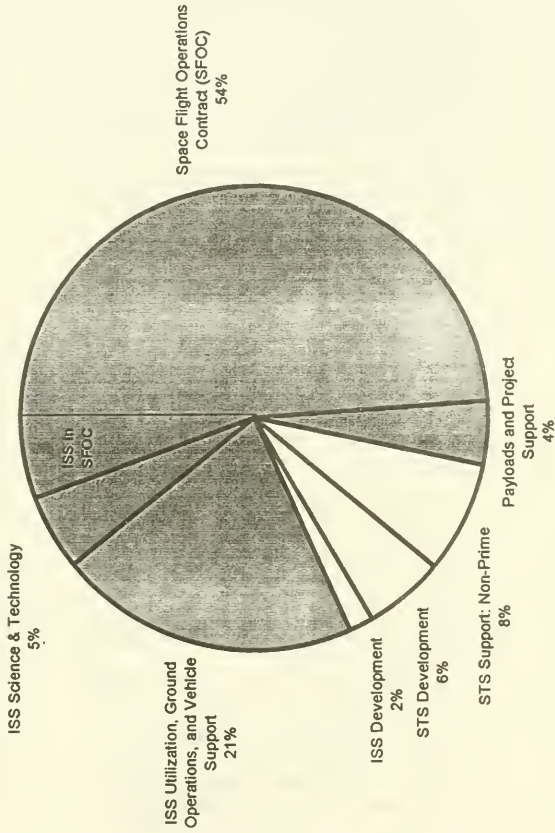
**ALL SHADED EFFORT IS
POTENTIALLY
COMPETABLE**



*This portion would only be comparable if the Total SFOC is competed

**HUMAN SPACE FLIGHT PLUS INTERNATIONAL SPACE STATION (ISS) SCIENCE
AND TECHNOLOGY
FY 2002 BUDGET**

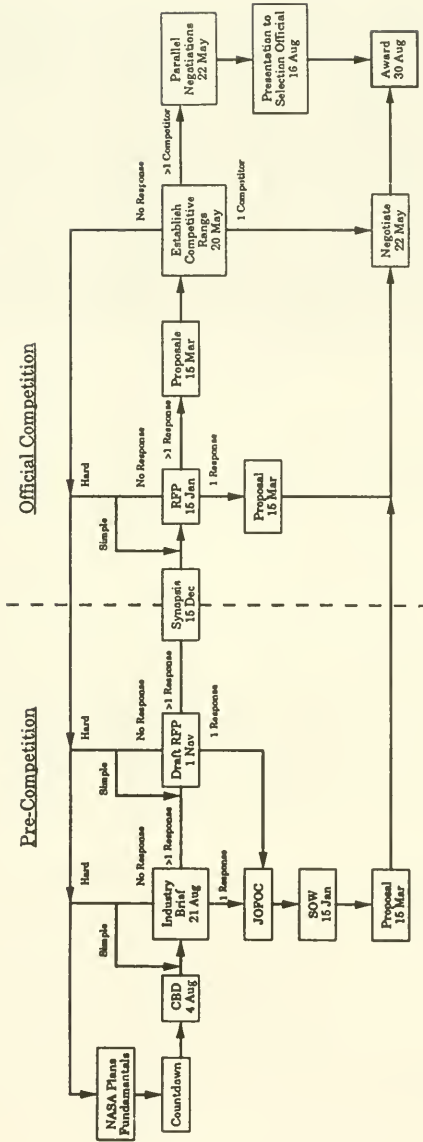
**ALL SHADED EFFORT IS
POTENTIALLY COMPETABLE**



Attachment 7

Chronology

<u>Event</u>	<u>Date</u>
1. Competition flow chart prepared	Aug. 2, 1995
2. CBD announces industry brief	Aug. 9, 1995
3. Industry briefing at JSC	Aug. 21, 1995
4. SEB formed	Aug. 25, 1995
5. CBD announces SFOC	Aug. 25, 1995
6. 2nd CBD for SFOC	Aug. 30, 1995
7. CBD synopsis amendment	Sept. 5, 1995
8. 2nd CBD amendment (milestones/collective bargaining)	Sept. 8, 1995
9. Clarification letter Evey to Industry Brief Attendees with synopsis	Sept. 8, 1995
10. Evey letter to BAMSI	Sept. 18, 1995
11. Evey letter to Boeing	"
12. Evey letter to BAMSI confirming 9/25 oral presentation	Sept. 21, 1995
13. Evey letter to USA confirming 9/26 oral presentation	"
14. Evey letter to McDac confirming 9/26 oral presentation	"
15. Evey Black out letter to all competitors	Sept. 26, 1995
16. Evey letters to BAMSI, USA, McDac, and Boeing re: subcontractors	Sept. 28, 1995
17. Evey letter to all interested subcontractors giving prime POCs	"
18. Notice to CBD--additional industry intent due by 10/20	Oct. 3, 1995
19. Industry Briefing (notes attached)	Oct. 10, 1995
20. Evey letter to subcontractors with copy of 10/10 presentation	Oct. 11, 1995
21. Evey letter to all announcing opening of library and release of draft RFP	Oct. 13, 1995
22. CBD announcement re: draft RFP	Oct. 17, 1995
23. 2nd CBD re: draft RFP	Oct. 18, 1995
24. CBD announces RFP release delay	Oct. 23, 1995
25. SEB chairman meets with Mr. Goldin	Nov. 3, 1995
26. SEB chairman meets with Mr. Goldin	Nov. 6, 1995
27. Meeting with Committee scheduled	Nov. 6, 1995
28. Meeting with Committee	Nov. 7, 1995
29. D and F signed and transmitted to Congress	Nov. 7, 1995
30. CBD announces sole source to USA	Nov. 9, 1995
31. FTC representative meets with NASA	Nov. 21, 1995



Aug 2, 1995

TEXT OF COMMERCE BUSINESS DAILY TO BE PUBLISHED AUGUST 9, 1995

NASA will conduct an industry briefing at NASA Johnson Space Center at 1:00 PM on August 21, 1995 in the Auditorium (Bldg 2) to brief interested parties on NASA's plan to restructure the Shuttle program. The plan to restructure includes reducing requirements, significantly reducing civil service involvement in day-to-day operations, modifying the government approach to safety and mission assurance, and consolidating contracts into a single prime contract. The briefing will include a program overview, the status of Shuttle restructuring activities, and contract consolidation plans. Based on the briefing, NASA will request expressions of interest and capability to manage a single prime/integration effort of this magnitude from members of industry. Contractors interested in attending the briefing should notify Bryan O'Connor in writing at NASA Headquarters, Code M7, Washington, D.C., 20546

National Aeronautics and
Space Administration
Headquarters
Washington, DC 20546-0001



ALB 25 1995

Attn of **M**

TO: Distribution
FROM: M/Associate Administrator for Space Flight
SUBJECT: Source Evaluation Board (SEB) For Shuttle Flight Operations Contract

Pursuant to Chapter 2 of the NASA Source Evaluation Board Handbook (NHB 5103.6), I hereby designate the following individuals to serve as members of the SEB for the purpose of evaluating proposals received in response to the solicitation for Shuttle Flight Operations.

Chairperson:

David H. Mobley, NASA Headquarters

Other Voting Members:

George Hopson, Marshall Space Flight Center
Jo Anne Morgan, Kennedy Space Center
Steve Hawley, Johnson Space Center
W. Lee Evey, Kennedy Space Center
Brock R. Stone, Johnson Space Center
James Costello, NASA Headquarters (Duty Station-JSC)
Roy Tharpe, Kennedy Space Center

Nonvoting Recorder

Jack Stokes, Marshall Space Flight Center

Ex-Officio Nonvoting Members:

Deborah Eve Lyon, NASA Headquarters
Connie B. Poole, NASA Headquarters

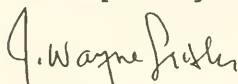
In addition, individuals occupying positions set forth on pages 1-3, 2-3, and 2-4 of NHB 5103.6B also serve as nonvoting ex-officio members.

The SEB will conduct its business in strict accordance with the provisions of the SEB handbook. The SEB Chairperson is responsible for determining that each SEB member (both voting and nonvoting) is fully conversant with the instructions contained in the handbook. SEB duties will take precedence over other regular duties of the SEB members.

Attention of the SEB Chairperson and each SEB member is particularly directed to Chapter 2 of the SEB handbook which describes the roles of key participants in the SEB process, including cognizant line and staff management, the SEB, and the Source Selection Official (SSO). The importance of the SEB function to agency programs necessitates continual management involvement throughout the evaluation and selection process.

It is emphasized that the SEB report and presentation are the principal tools available to the SSO to perform a comparative analysis for making the final source selection decision and must be presented in sufficient depth to permit the intelligent weighing of alternatives. All proposals will be evaluated and reported in accordance with the SEB handbook. The SEB's written findings will give no consideration to elements which are extraneous to the objectives of this procurement.

Attention of the SEB Chairperson and the SEB is further directed to FAR 15.612(e) and Chapter 2 of the SEB handbook which prohibit the disclosure of information to anyone who is not also participating in the same evaluation proceedings. After receipt of proposals, all information contained in the proposals submitted for evaluation will be protected and will be made available only to the members (voting and nonvoting) of the SEB and to properly designated committees and panels on a need-to-know basis. The right to information on a need-to-know basis does not extend to the normal chain of supervision of any member of the SEB or to any individual having technical responsibility for the effort being evaluated except as specifically approved by the SEB Chairperson on a case-by-case basis. Individuals so designated by the SEB Chairperson will be notified, in writing, of the privileged character of proposal information.


J. Wayne Little

Distribution:
AE/Mr. Mobley
H/Ms. Lee
HS/Mr. Fournier
 Ms. Poole
G/Mr. Frankle
GK/Mr. Forbes
 Ms. Lyon
MSFC/Mr. Hopson
 Mr. Stokes
KSC/Mr. Tharpe
 Mr. Evey
 Ms. Morgan
JSC/Mr. Hawley
 Mr. Stone
 Mr. Costello

MEMORANDUM FOR RECORD

August 18, 1995

The proposed correspondence designates the voting members of the Source Evaluation Board for the Shuttle Flight Operations Contract. The content and format of the letter are set forth in NASA's Source Evaluation Handbook, NHB 5103.6. The required Non-Disclosure and Procurement Integrity Certifications, along with the required financial disclosure forms will be obtained from the designated members. The Non-Disclosure and Procurement Integrity Certifications will be maintained on file at MSFC in the SEB Facility. The financial disclosure forms will be obtained and forwarded to Code GG for review.

Code M signature of the proposed correspondence is recommended. Please direct any questions to the undersigned at 358-0427.

Connie B. Poole
Procurement Analyst

CBD Issue: 8/25/1995

NASA, George C. Marshall Space Flight Center, Procurement Office, Code GP12, Marshall Space Flight Center, Huntsville, Alabama, [35812], Attn: Space Flight Operations Restructure

18-- SPACE FLIGHT OPERATIONS CONTRACT SOL RFP 8-SSP-SEB DUE 091195 POC
Contact Mr. Walker Lee Evey/GP12, (205) 961-2031 NASA is seeking to identify sources for the Space Flight Operations Contract -- Interested parties should submit indications of interest in writing to include the following (25 Page Maximum): Company Name -- Company Description (Small or Large Business, 8(A), Small Disadvantaged, -- Address -- Name and Title of Point of Contact -- Phone Number -- Fax Number -- Internet Address (if available) -- Company Size (Both approximate number of employees and approximate yearly dollar sales for work of the type contemplated in this contract: Identify the number of contracts for work of comparable technical and management complexity currently held by the firm within the past 10 years which exceed \$100M in dollar value and/or Identify the dollar value of the largest contract performed by the firm within the last 10 years which contains work of a nature similar to and comparable in complexity to the contract contemplated here) -- Whether company is interested in Prime or Subcontractor opportunities -- A Statement of Capabilities of the firm with regard to accomplishing work of this size and nature (Managing and performing Operations and Program Integration for Space Flight Operations as a Single Prime Contractor -- Preliminary Concepts for Accommodating "Principles for Contract Consolidation/Single Prime Contract" (Reference: August 21, 1995 briefing) -- Preliminary Concepts for a Safe Transition from the Current Management Structure to a Single Prime Contract -- Preliminary Concepts for Eventual Privatization of All or Parts of Space Flight Operations -- A list of key issues or concerns for which your firm desires additional information or clarification which would be helpful in preparing a formal proposal for this work -- NASA is tentatively contemplating a viewing period at each of the involved Centers (Please state any desire for site visits or other information-gathering opportunities which would be particularly helpful in preparing a formal proposal) -- Any additional comments, recommendations, or statements of capability which would assist NASA in the assessment of your firm's capabilities, preparation of a solicitation, and/or the conduct of a competitive procurement are solicited -- Oral Presentations will be arranged upon Request for Prime Contractor Candidates -- (FAX: 205 544-8353) -- All responsible sources may submit a proposal which will be considered by the agency. (0235)

WELCOME TO CBD ONLINE

CBD ISSUE ONLINE: Wednesday, August 30, 1995

Searching Procurements...1 record found

Record number:1

CBD Issue:8/30/1995

KEYWORD:35812

18 -- SPACE FLIGHT OPERATIONS CONTRACT SOL RFP 8-SSP-SEB DUE 091195 POC
 Contact Mr. Walker Lee Evey/GP12, (205) 961-2031 MODIFICATION -- This synopsis
 replaces synopsis previously published in CBD on August 25, 1995 -- NASA is
 seeking to identify sources for the Space Flight Operations Contract --
 Interested parties should submit indications of interest in writing to include
 the following (25 Page Maximum): Company Name -- Company Description (Small or
 Large Business, 8(A), Small Disadvantaged) -- Address -- Name and Title of
 Point of Contact -- Phone Number -- Fax Number -- Internet Address (if
 available) -- Company Size (Both approximate number of employees and
 approximate yearly dollar sales for work of the type contemplated in this
 contract; Identify the number of contracts for work of comparable technical
 and management complexity currently held by the firm within the past 10 years
 which exceed \$100M in dollar value and/or identify the dollar value of the
 largest contract performed by the firm within the last 10 years which contains
 work of a nature similar to and comparable in complexity to the contract
 contemplated here) -- Whether company is interested in Prime or Subcontractor
 opportunities -- A Statement of Capabilities of the firm with regard to
 accomplishing work of this size and nature (Managing and performing Operations
 and Program Integration as a Single Prime Contractor for Space Flight
 Operations) Specifically, and provide examples in sufficient detail to allow a
 reasonable determination to be made of: past experience, technical
 capabilities, personnel resources, management resources, facilities and
 equipment resources, and financial resources -- A Statement of Interest in
 managing and performing Operations and Program Integration for Space Flight
 Operations as a Single Prime Contractor -- Preliminary Concepts for
 Accommodating "Principles for Contract Consolidation/Single Prime Contract"
 (Reference: August 21, 1995 briefing) -- Preliminary Concepts for a Safe
 Transition from the Current Management Structure to a Single Prime Contract --
 Preliminary Concepts for Eventual Privatization of All or Parts of Space
 Flight Operations -- A list of key issues or concerns for which your firm
 desires additional information or clarification which would be helpful in
 preparing a formal proposal for this work -- NASA is tentatively contemplating
 a viewing period at each of the Involved Centers (Please state any desire for
 site visits or other information-gathering opportunities which would be
 particularly helpful in preparing a formal proposal) -- Any additional
 comments, recommendations, or statements of capability which would assist NASA
 in the assessment of your firm's capabilities, preparation of a solicitation,
 and/or the conduct of a competitive procurement are solicited -- Oral
 Presentations will be arranged upon Request for Prime Contractor Candidates --
 (FAX: 205 544-8353) -- All responsible sources may submit a proposal which
 will be considered by the agency. (0240)

NASA, George C. Marshall Space Flight Center, Procurement Office, Code GP12,
 Marshall Space Flight Center, Huntsville, Alabama, [35812]. Attn: Space Flight
 Operations Restructure

Transmission via CBD Express V. 5.0
NASA, Marshall Space Flight Center, AL

1. M!!
2. 0905!!
3. 95!!
4. 8044!!
5. 35812!!
6. 18!!
7. NASA, George C. Marshall Space Flight Center, Procurement Office,
Code
GP12, Marshall Space Flight Center, Huntsville, Alabama, 35812, Attn:
Space
Flight Operations Restructure!!
8. 18 -- SPACE FLIGHT OPERATIONS CONTRACT!!
9. RFP 8-SSP-SEB!!
10. 091495!!
11. Contact Mr. Walker Lee Evey/GP12, (205) 961-2031!!
12. N/A!!
13. N/A!!
14. N/A!!
15. N/A!!
16. N/A!!
17. AMENDMENT -- This notice clarifies the synopsis previously
published in CBD on August 30, 1995 -- The following clarifications are
provided in response to questions related to information provided at the
August 21, 1995, Space Shuttle Restructuring Industry Briefing --
References are to the briefing material provided at the meeting: -- 1.
Page 21, second items states: "Design knowledge and expertise for major
hardware elements must be maintained - A single contractor must have
full responsibility for each major hardware element (e.g., engineering,
production, processing, integration)" -- The "single contractor" refers
to those flight element contractors responsible for the initial "design,
knowledge, and expertise" which NASA judges should be maintained through
the proposed restructuring -- This includes as a minimum: Thiokol
(RSRM), Lockheed Martin Marietta Systems (ET), Rocketdyne (SSME), and
Rockwell (Orbiter) -- In the restructured program, NASA expects these
element contractors to have full accountability for their major hardware
elements in contrast to today's program in which accountability is
shared by multiple contractors -- As a minimum, these contractors would:
a) provide engineering for all work specific to their hardware, b)
have responsibility for approval and assurance for all processes and
procedures related to their hardware -- It is expected that some work
conducted at KSC could be provided by "pools" of qualified technicians
and that some other functions (e.g., quality, shared logistics, ground
support, and generic functional engineering) could be also provided from
common sources -- The intent of our requirement is to initiate a process
of streamlining accountability and responsibility across the program --
At present, we have shared responsibility between functional contractors
for hardware which results in several undesirable and inefficient
practices: e.g., (a) maintaining excessive numbers of engineers and
overlapping responsibilities between organizations, (b) element
contractors maintaining "oversight" engineering groups at KSC to review
processing contractor engineering, and (c) multiple configuration
control systems for the same hardware and rewriting "paper" as hardware
is transferred between responsible functional organizations -- Similar
overlap exists between government organizations, and these will also be
eliminated -- 2. Pages 23 and 24 provide guidelines for contract
consolidation -- The primary intent of these guidelines is to indicate
the range of criteria and potential dispositions of those current
contracts which would not be subject to recompetition in the proposed

Single prime contractor selection process -- Some contracts not meeting these criteria and with appropriate periods of performance or contract options will be competed -- At this time, we expect the recompetition to involve approximately 30 percent of the total contractor direct workforce -- Considering the potential significance of these clarifications, NASA will allow an extension of the requested response time to 14 September 1995 -- Industry comments on these clarifications are welcomed.*****

Transmission via CBD Express V. 5.0
NASA, Marshall Space Flight Center, AL

- 48
1. M!!
 2. 0908!!
 3. 95!!
 4. 8044!!
 5. 35812!!
 6. 18!!
 7. NASA, George C. Marshall Space Flight Center, Procurement Office, Code GP12, Marshall Space Flight Center, Huntsville, Alabama, 35812, Attn: Space Flight Operations Restructure!!
 8. 18 -- SPACE FLIGHT OPERATIONS CONTRACT!!
 9. RFP 8-SSP-SEB!!
 10. 091495!!
 11. Contact Mr. Walker Lee Evey/GP12, (205) 961-2031!!
 12. N/A!!
 13. N/A!!
 14. N/A!!
 15. N/A!!
 16. N/A!!
 17. AMENDMENT 2 -- This notice clarifies the synopsis originally published in CBD on August 30, 1995 -- This notice provides the applicable acquisition dates per FAR 22.1010, Notification to Interested Parties Under Collective Bargaining Agreements -- The milestones for this procurement are targeted to be accomplished no sooner than the following dates: ISSUE DRAFT REQUEST FOR PROPOSAL (RFP) -- November 1, 1995; ISSUE RFP -- JANUARY 15, 1996; RECEIVE PROPOSALS -- March 15, 1996; START DISCUSSIONS -- May 15, 1996; AWARD CONTRACT -- August 30, 1996; BEGIN CONTRACT PERFORMANCE -- October 1, 1996 -- In addition to this notice, it is our intent at the current time to also have the individual NASA Contracting Officers of Shuttle-related contracts affected by this procurement to give written notification of the forthcoming successor contract and these target applicable acquisition dates to both the incumbent contractors and the collective bargaining agents for the contractors' employees and the subcontractors' employees, where appropriate.*****

SYNOPSIS ELECTRONICALLY TRANSMITTED TO CBD	
BY: <i>L. Glaser</i>	DATE: <i>9-8-95</i>

National Aeronautics and
Space Administration
George C. Marshall Space Flight Center
Marshall Space Flight Center, AL 35812



10 APR 95

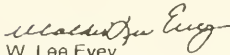
GP12/SB-SSR (95-012)

September 8, 1995

TO: Space Shuttle Industry Briefing Attendees

SUBJECT: Space Shuttle Restructuring Industry Briefing - Clarifications

The attached synopsis was published in the Commerce Business Daily. Since you were an attendee at the Industry Conference held in Houston, Texas, on August 21, 1995, we are providing a copy of this most recent CBD synopsis.


W. Lee Evey
Contracting Officer

Enclosure

transmission via CBD Express V. 5.0
NASA, Marshall Space Flight Center, AL

1. M!!
2. 0905!!
3. 95!!
4. 8044!!
5. 35812!!
6. 18!!
7. NASA, George C. Marshall Space Flight Center, Procurement Office,
Code
GP12, Marshall Space Flight Center, Huntsville, Alabama, 35812, Attn:
Space
Flight Operations Restructure!!
8. 18 -- SPACE FLIGHT OPERATIONS CONTRACT!!
9. RFP 8-SSP-SEB!!
10. 091495!!
11. Contact Mr. Walker Lee Evey/GP12, (205) 961-2031!!
12. N/A!!
13. N/A!!
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Page 21, second items states: "Design knowledge and expertise for major
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full responsibility for each major hardware element (e.g., engineering,
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Rockwell (Orbiter) -- In the restructured program, NASA expects these
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elements in contrast to today's program in which accountability is
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and that some other functions (e.g., quality, shared logistics, ground
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At present, we have shared responsibility between functional contractors
for hardware which results in several undesirable and inefficient
practices: e.g., (a) maintaining excessive numbers of engineers and
overlapping responsibilities between organizations, (b) element
contractors maintaining "oversight" engineering groups at KSC to review
processing contractor engineering, and (c) multiple configuration
control systems for the same hardware and rewriting "paper" as hardware
is transferred between responsible functional organizations -- Similar
overlap exists between government organizations, and these will also be
eliminated -- 2. Pages 23 and 24 provide guidelines for contract
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the range of criteria and potential dispositions of those current
contracts which would not be subject to recompetition in the proposed

single prime contractor selection process -- Some contracts not meeting these criteria and with appropriate periods of performance or contract options will be competed -- At this time, we expect the recompetition to involve approximately 30 percent of the total contractor direct workforce -- Considering the potential significance of these clarifications, NASA will allow an extension of the requested response time to 14 September 1995 -- Industry comments on these clarifications are welcomed.*****

National Aeronautics and
Space Administration
George C. Marshall Space Flight Center
Marshall Space Flight Center, AL 35812



Reply to Attn of

GP12/SB-SSR (95-044)

September 18, 1995

BAMSI, Inc.
Attn: Mr. Hugh M. Brown
P.O. Box 1659
Titusville, FL 32780

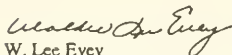
SUBJECT: Commerce Business Daily (CBD) Announcement, Space Flight
Operations Contract (Your Ltr, dated September 11, 1995)

NASA has reviewed the Statement of Interest and Capability submitted by your firm in response to NASA's August 21, 1995, Space Flight Operations Restructure Industry Briefing and NASA's subsequent Commerce Business Daily Sources Sought Synopsis which addressed the same topic. Your response is sincerely appreciated. NASA would at this time like to extend a request for your firm to make an oral presentation to NASA personnel involved in the Space Flight Operations Restructure. The remaining time and date availability for presentations is as follows:

TIME	DATE
• 9 a.m. to 12 noon	Monday, September 25, 1995
• 1 p.m. to 4 p.m.	Monday, September 25, 1995
• 1 p.m. to 4 p.m.	Tuesday, September 26, 1995

Please FAX your response to the undersigned at (205) 544-9133 at your earliest convenience to confirm your decision to either make or not make an oral presentation. In addition please indicate the preferred time/date for such a presentation.

In addition, NASA desires to make public the names of firms expressing interest in competing as a prime contractor for this effort in order to give potential subcontractors the opportunity to contact potential primes and make them aware of their capabilities. It is requested your FAX response indicate your willingness to allow NASA to release your name, as a potential competitor for this effort, to the public. This will not include release of any sensitive information provided in your expression of interest and capability. All sensitive information will be maintained as confidential unless you request otherwise.



W. Lee Evey
Contracting Officer

National Aeronautics and
Space Administration
George C. Marshall Space Flight Center
Marshall Space Flight Center, AL 35812



Reply to A211 of

GP12/SB-SSR (95-046)

September 18, 1995

Boeing Defense & Space Group
Attn: Mr. Allen B. Ashby
P.O. Box 3999 M/S 84-16
Seattle, Washington 98124-2499

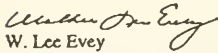
SUBJECT: Commerce Business Daily (CBD) Announcement, Space Flight
Operations Contract (Your Ltr, dated September 14, 1995)

NASA has reviewed the Statement of Interest and Capability submitted by your firm in response to NASA's August 21, 1995, Space Flight Operations Restructure Industry Briefing and NASA's subsequent Commerce Business Daily Sources Sought Synopsis which addressed the same topic. Your response is sincerely appreciated. NASA would at this time like to extend once again an opportunity for your firm to make an oral presentation to NASA personnel involved in the Space Flight Operations Restructure. While an oral presentation is not mandatory, the desire to make such a presentation has been indicated by some potential offerors. We want to ensure that every firm with an interest in competing for prime contractor has been formally invited to present an oral presentation. The remaining time and date availability for presentations is as follows:

TIME	DATE
• 9 a.m. to 12 noon	Monday, September 25, 1995
• 1 p.m. to 4 p.m.	Monday, September 25, 1995
• 1 p.m. to 4 p.m.	Tuesday, September 26, 1995

Please FAX your response to the undersigned at (205) 544-9133 at your earliest convenience to confirm your decision to either make or not make an oral presentation. In addition please indicate the preferred time/date for such a presentation.

In addition, NASA desires to make public the names of firms expressing interest in competing as a prime contractor for this effort in order to give potential subcontractors the opportunity to contact potential primes and make them aware of their capabilities. It is requested your FAX response indicate your willingness to allow NASA to release your name, as a potential competitor for this effort, to the public. This will not include release of any sensitive information provided in your expression of interest and capability. All sensitive information will be maintained as confidential unless you request otherwise.


W. Lee Evey
Contracting Officer

National Aeronautics and
Space Administration

George C. Marshall Space Flight Center
Marshall Space Flight Center, AL 35812



Reply to ADN of

GP12/SB/SSR (95-059)

September 21, 1995

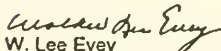
BAMSI, Inc.
Attn: Mr. Hugh M. Brown
P.O. Box 1659
Titusville, FL 32870

SUBJECT: Confirming Oral Presentation

The oral presentation for your firm will be held September 25, 1995, 1 p.m., at Marshall Space Flight Center. The location for this presentation will be held in building 4200, room P106 (an area map is enclosed).

You will be met in the lobby of building 4200 by Ms. Gale Chamell. She will assist members of your team in obtaining badges and will escort you to room P106.

We look forward to meeting with you. If you have questions, feel free to contact me at (205) 961-2031.


W. Lee Evey
Contracting Officer

Enclosure

National Aeronautics and
Space Administration

George C. Marshall Space Flight Center
Marshall Space Flight Center, AL 35812



copy to Attn of

GP12/SB/SSR (95-058)

September 21, 1995

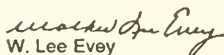
United Space Alliance
Attn: Glynn S. Lunney
600 Gemini Avenue
Houston, TX 77058-2777

SUBJECT: Confirming Oral Presentation

The oral presentation for your firm will be held September 26, 1995, 1 p.m., at Marshall Space Flight Center. The location for this presentation will be held in building 4200, room P106 (an area map is enclosed).

You will be met in the lobby of building 4200 by Ms. Gale Chamell. She will assist members of your team in obtaining badges and will escort you to room P106.

We look forward to meeting with you. If you have questions, feel free to contact me at (205) 961-2031.


W. Lee Evey
Contracting Officer

Enclosure

National Aeronautics and
Space Administration

George C. Marshall Space Flight Center
Marshall Space Flight Center, AL 35812



Reply to Attn of

GP12/SB/SSR (95-060)

September 21, 1995

McDonnell Douglas Aerospace
Attn: Dr. W. P. Olson
P.O. Box 516
St. Louis, MO 63166-0516

SUBJECT: Confirming Oral Presentation

The room designated for our meeting on Tuesday, September 26, 1995, at 9 a.m., has been changed to P106, building 4200.

You will be met in the lobby of building 4200 by Ms. Gale Chamell. She will assist members of your team in obtaining badges and will escort you to room P106.

We look forward to meeting with you. If you have questions, feel free to contact me at (205) 961-2031.

A handwritten signature in cursive script, appearing to read "W. Lee Evey".

W. Lee Evey
Contracting Officer

Enclosure

cc:
MDC/Mr. R. D. Goodman

National Aeronautics and
Space Administration
George C. Marshall Space Flight Center
Marshall Space Flight Center, AL 35812



Reply to Airtel of

GP12/SB/SFOC (95-062)

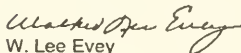
September 26, 1995

TO: All Prospective Prime and Subcontractor Candidates

SUBJECT: Agency Interactions with Industry on the Space Flight
Operations Contract

In order to promote competition and facilitate the flow of communications between NASA and its industry partners for the above referenced acquisition, a single focal point has been established and will be maintained to ensure fair and equitable information is provided to all prospective offerors. All inquiries from and communications with private industry regarding the single prime contract will be handled by the Contracting Officer, Mr. Lee Evey, or his designated representatives, Mr. Randy Gish or Ms. Connie Poole. These individuals can be reached at (205) 961-2040 or FAX (205) 544-9133. These communications restrictions will remain in effect until further notice.

Steps are currently under way to establish an Offerors' Library at Marshall Space Flight Center. Details regarding the library will be furnished as soon as they are available.


W. Lee Evey

National Aeronautics and
Space Administration

George C. Marshall Space Flight Center
Marshall Space Flight Center, AL 35812



Reply to ASn of

GP12-SB/SFOC (95-075)

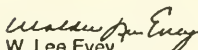
September 28, 1995

US Alliance
Attn: Mr. Rich Hickman
600 Gemini Avenue
Houston, TX 77058

SUBJECT: Subcontracting Opportunities, Space Flight Operations Contract
(SFOC)

Enclosed is a list of the firms that have expressed an interest in subcontracting opportunities for the above referenced acquisition. The list is being provided to you in order to facilitate communication between potential prime and subcontractor candidates. As additional expressions of interest are received, the list is being continuously updated. Recommend you check periodically check with our office to obtain an updated list. This information will also be placed in the Offerors' Library which is currently being established.

Please direct any questions you may have to Connie B. Poole, (205) 961-0375.


W. Lee Evey
Contracting Officer

Enclosure

cc: Mr. Glynn Lunney

National Aeronautics and
Space Administration
George C. Marshall Space Flight Center
Marshall Space Flight Center, AL 35812



Reply to Attn of

GP12-SB/SFOC (95-072)

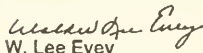
September 28, 1995

BAMSI
Attn: Mr. Marshall Randall
P.O. Box 1659
Titusville, FL 32781

SUBJECT: Subcontracting Opportunities, Space Flight Operations Contract
(SFOC)

Enclosed is a list of the firms that have expressed an interest in subcontracting opportunities for the above referenced acquisition. The list is being provided to you in order to facilitate communication between potential prime and subcontractor candidates. As additional expressions of interest are received, the list is being continuously updated. Recommend you check periodically check with our office to obtain an updated list. This information will also be placed in the Offerors' Library which is currently being established.

Please direct any questions you may have to Connie B. Poole, (205) 961-0375.


W. Lee Evey
Contracting Officer

Enclosure

cc: Mr. Hugh Brown

National Aeronautics and
Space Administration
George C. Marshall Space Flight Center
Marshall Space Flight Center, AL 35812



Reply to Attn of

GP12-SB/SFOC (95-073)

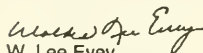
September 28, 1995

Boeing
Attn: Mr. Robert Buss
499 Boeing Blvd.
Mail Code: JR-63
Huntsville, AL 35824

SUBJECT: Subcontracting Opportunities, Space Flight Operations Contract
(SFOC)

Enclosed is a list of the firms that have expressed an interest in subcontracting opportunities for the above referenced acquisition. The list is being provided to you in order to facilitate communication between potential prime and subcontractor candidates. As additional expressions of interest are received, the list is being continuously updated. Recommend you check periodically check with our office to obtain an updated list. This information will also be placed in the Offerors' Library which is currently being established.

Please direct any questions you may have to Connie B. Poole, (205) 961-0375.


W. Lee Evey
Contracting Officer

Enclosure

cc: Mr. Robert McQueen

National Aeronautics and
Space Administration
George C. Marshall Space Flight Center
Marshall Space Flight Center, AL 35812



Reply to Attn of

GP12-SB/SFOC (95-074)

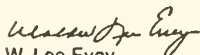
September 28, 1995

McDonnell Douglas
Attn: Mr. Dennis Brown
Mail Code: 15-2
5301 Bolsa Avenue
Huntington Beach, CA 92647

SUBJECT: Subcontracting Opportunities, Space Flight Operations Contract
(SFOC)

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Please direct any questions you may have to Connie B. Poole, (205) 961-0375.


W. Lee Evey
Contracting Officer

Enclosure

cc: Mr. R. D. Goodman

National Aeronautics and
Space Administration

George C. Marshall Space Flight Center
Marshall Space Flight Center, AL 35812



Reply to Attn of

GP12-SB/SFOC (95-071)

September 28, 1995

TO: Offerors Expressing Interest in Subcontracting Opportunities

SUBJECT: Subcontracting Opportunities, Space Flight Operations Contract

Your firm responded to the Commerce Business Daily "sources sought" synopsis for the above referenced acquisition. Four companies have now been identified as potential candidates for award of the prime contract. In order to facilitate communication between potential prime and subcontractor candidates, the following information is provided.

Prime contractor candidates and the points of contact they have designated for subcontracting opportunities are:

BAMSI
ATTN: Mr. Marshall Randall
P.O. Box 1659
Titusville, FL 32781
Phone: (407) 269-4193
FAX: (407) 268-8454

Boeing
ATTN: Mr. Robert Buss or
Mr. Robert MacQueen
499 Boeing Blvd
Mail Code: JR-63
Huntsville, AL 35824
Phone: (205) 461-2006 (Mr. Buss)
(205) 461-3710 (Mr. MacQueen)
FAX: (205) 461-3070 (Mr. Buss)
(205) 461-2730 (Mr. MacQueen)

McDonnell Douglas
ATTN: Dennis Brown
Mail Code: 15-2
5301 Bolsa Avenue
Huntington Beach, CA 92647
Phone: (714) 896-6976
FAX: (714) 896-2630

US Alliance
ATTN: Rich Hickman
600 Gemini Avenue
Houston, TX 77058
Phone: (713) 282-4245
FAX: (713) 282-4505

Each of the firms listed above has been provided a list of companies interested in subcontracting opportunities. The list will also be included in an Offerors' Library which is currently being established.

Please direct any questions you may have to Connie B. Poole, (205) 961-0375.

W. Lee Evey
W. Lee Evey
Contracting Officer

Author: RICK GLOVER at MSFC5PO

Date: 10/3/95 2:35 PM

Subject:

----- Message Contents -----

Transmission via CBD Express V. 6.0
NASA, Marshall Space Flight Center, AL

1. M!!
2. 1003+!
3. 95!!
4. GPO751025!!
5. 35812!!
6. 18!!
7. NASA, George C. Marshall Space Flight Center, Procurement Office, Marshall Space Flight Center, AL 35812!!
8. 18 -- SPACE FLIGHT OPERATIONS CONTRACT!!
9. RFP 8-SSP-SEB!!
10. 102095!!
11. Contact Mr. Walker Lee Evey/GP12/Attn: Space Flight Operations Contract, (205) 961-2040!!
12. N/A!!
13. N/A!!
14. N/A!!
15. N/A!!
16. N/A!!
17. AMENDMENT 3 - ADDITIONAL INFORMATION -- This synopsis provides further detail regarding an announcement previously published in CBD on August 30, 1995 -- Expressions of interest for NASA Space Flight Operations Contract (SFOC) have been obtained from four prime contractor candidates: BAMSI, Titusville, FL; Boeing, Seattle, WA; McDonnell Douglas Aerospace, St. Louis, MO; and United Space Alliance, a joint venture formed by Rockwell and Lockheed Martin, Houston, TX. Approximately 40 firms have expressed interest in subcontracting opportunities. On September 25 and 26, capabilities presentations were received from prime contractor candidates. On October 10 at Marshall Space Flight Center, as a follow-on to those capability presentations, the four prime contractor candidates identified to date will be provided with some preliminary schedule and planning information prior to release of the draft RFP in November. It is our intent, by not later than October 11, to send this information by mail to all candidates identified to date as well as those who respond to this notice. No further action is necessary at this time by any firm who has already submitted an expression of interest. Those firms who have not already done so may submit written statements of interest and capability in compliance with the instructions provided in the CBD announcement of August 30, 1995. Submissions are due NLT October 20, 1995. -- Any interested party who wishes to receive this information but does not wish to pursue subcontracting opportunities, may receive it upon written request.*****

SPACE FLIGHT OPERATIONS CONTRACT PRELIMINARY BRIEFING TO
POTENTIAL PRIME CONTRACTORS.

THE FOLLOWING IS PRELIMINARY INFORMATION AND IS SUBJECT TO
CHANGE. IT IS NOT TO BE USED FOR PREPARATION OF PROPOSALS

OCTOBER 10, 1995
PRESENTATION TO INDUSTRY

Opening: Mr. David Mobley opened the meeting by noting that this procurement would reflect a new way of doing business for NASA and that several of the unique features would be reflected in this presentation. He discussed the fact that this procurement was on an extremely short schedule. He made sure that all understood that communications between industry and NASA were open but controlled with all questions to come through Walker L. "Lee" Evey, Contracting Officer.

Basic Presentation: The presentation was made by Mr. Evey. He began by stating that this presentation was in response to questions the contractors had raised during their presentations on September 25 and 26. Mr. Evey did emphasize that this solicitation was, for NASA, a new way of doing business. Groundrules for the presentation included that there would be no debating of issues; however, clarification questions were permissible. All questions and answers would be summarized and distributed to interested parties.

Presentation Attached:

Questions Arising from the Presentation:

Chart 4, Pictorial Presentation of Award fee Evaluation:

Question: With regard to award fee, will there be any fee "rolled-forward"?

NASA Response: No.

Question: Does the NASA concept of the "SuperBoard" contemplate only "take-back" i.e., the SuperBoard would not increase interim award fee scores?

NASA Response: That is correct. The current concept only contemplates acceptance of the interim on-ground evaluations or a take-back.

Chart 9, Accelerated Procurement Schedule:

Question: NASA plans to have a face-to-face meeting to explain the draft RFP on its date of release. Does NASA plan the same type of meeting for the formal RFP?

NASA Response: It depends upon the comments received on the draft RFP and the scope of changes from the draft to the final document.

Chart 20, Innovative Source Selection:

During Discussions, NASA noted that oral proposals would, as currently contemplated, consist of one hour for offeror presentation with the remainder of the day spent with

offerors addressing situational problems. All offerors will be asked identical questions. NASA will be looking for answers from those individuals who will be working the problems day-to-day (e.g., the offeror's in-line management team).

Oral presentations will be scored and points attributed to oral presentations will be meaningful.

Chart 30, Directed Existing Subcontracts:

Question: If current arrangement is a "bad deal" or performance under a directed existing subcontract is bad (e.g., overrun), will this become the responsibility of the prime contractor?

NASA Response: Yes. The prime contractor is responsible for overall performance. As part of the effort under the SFOC contract, the prime contractor is expected to renegotiate directed existing subcontracts to improve upon existing arrangements.

Question: Is a "plug" number the cost and fee for the directed existing subcontracts, and will these "plug" numbers be provided for the life of the subcontract?

NASA Response: "Plug" numbers are to be used for purposes of proposal preparation. Where possible, NASA will negotiate the cost and fee of the directed existing subcontracts and replace the "plug" numbers with actual value. If this is not possible, adjustments for actual value of the directed existing subcontracts will be made via modification to the SFOC contract.

It was noted that the "plug" numbers will be handled differently for the different types of directed existing subcontracts. For Type 1, "plug" numbers will be provided through the life of the existing NASA contract; the offeror is then free to propose an alternative arrangement. For Type 2, the "plug" numbers will be provided for the life of the SFOC contract.

Question: Will the offerors be able to propose different arrangements (e.g., sources) for the existing directed subcontracts when current periods of performance are complete?

NASA Response: Yes for Type 1 directed existing subcontracts. Again, Type 2 will remain directed subcontracts until NASA is convinced by the SFOC contractor that competition or some other alternatives is feasible and will support safety and schedule requirements.

Question: Will all contracts affected by the SFOC contract be identified by subcontract category in the draft RFP?

NASA Response: Yes. Further, the draft RFP will address the impact to the originally identified 85 contracts so as to provide a trace (roadmap) from that original list.

Chart 35, Transition of Existing Primes:

Question: Why does the chart end after FY01; is this some form of message?

NASA Response: No. Original planning was for only five years and the chart has not been updated to reflect the addition of five 1 year options.

Question: Will NASA support a logical transition plan with necessary terminations for convenience?

NASA Response: It is NASA's goal to minimize terminations, the details of the transition plan are still in development, but NASA will provide the baseline in the Draft RFP.

Chart 36, Split Contract -- Concept:

During a discussion of this chart, NASA noted that actual contract transition, over the life of the SFOC contract, would take into consideration not only development complete, but also the maturity of the contractor's understanding of the work.

QUESTIONS ASKED AFTER THE PRESENTATION:

Question: Is this presentation controlled?

NASA Response: No. It will sent out to all interested parties.

Question: There is not much that has been provided related to Space Station Logistics. How is it involved?

NASA Response: Space Station operations will be included in the SFOC, but there is not much more detail that we have at this time. We do not know if there will be directed existing subcontracts in this arena. We are not going to include in the SFOC contract any thing that is currently included in the existing Boeing Space Station Contract (NAS 15-10000) but Space Station operations is not included in that contract. NASA desires to maximize synergism between Shuttle and Station as much as possible but has not resolved this as an issue.

Question: How do you expect to handle Station Sustaining Engineering?

NASA Response: We do not know yet.

Question: For Incentive Fee versus Award Fee, is NASA going to specify weightings?

NASA Response: NASA does intend to specify a specific award fee pool, but we are still considering how to best handle incentive fee.

Question: Will the performance metrics established in the SOW be evaluated under Award fee?

NASA Response: Yes It is NASA's intent to manage this contract by fact not anecdote. That does not mean that the award fee process will be a mathematical or mechanical evaluation. It will remain a subjective evaluation but will utilize, to the maximum extent possible, factual data.

Question: Will the award fee evaluation be subjective or objective?

NASA Response: It will be subjective, but the Fee Determination Official will have a substantial amount of objective information to aid in fee determination.

Question: How many performance measures will there be?

NASA Response: We do not know at this time. The SOW is still under construction.

Question: Is the ASM meeting on the schedule an internal NASA meeting?

NASA Response: Yes.

Question: Will it be clear in the draft RFP how the 85 contracts outlined by Dr. Littles will be affected?

NASA Response: Yes They will be addressed specifically in the draft RFP

Question: Hypothetical "plug" number situation: Assume you have a directed existing subcontract with four years remaining on the subcontract. Is the offeror free to propose something other than a directed subcontract for the effort after the four years are complete?

NASA Response: Yes, if the subcontract is a Type 1 directed existing subcontract. No, if it is a Type 2.

Question: How does the SFOC activity play in the overall NASA restructure?

NASA Response: NASA plans to freeze requirements as of the draft RFP and thus provide offerors a baseline from which to bid. Any changes to that baseline will be handled as modifications to the contract after award.

END OF QUESTIONS.

National Aeronautics and
Space Administration

George C. Marshall Space Flight Center
Marshall Space Flight Center, AL 35812



Reply to AFN of

GP12/SB-SFOC (96-007)

October 11, 1995

TO: Prospective Subcontractor Candidates
FROM: Contracting Officer, Space Flight Operations
SUBJECT: Space Flight Operations Contract

On October 10, 1995, a meeting was held with the four prime contractor candidates who have been identified to date for the above referenced contract. During the meeting, which was a follow-on to the capabilities presentations previously given by the four firms, preliminary planning and schedule information was given. The same information is now being provided to all interested parties as an enclosure to this letter.

Release of a draft RFP not later than mid-November is anticipated and will be announced in a Commerce Business Daily synopsis.

A handwritten signature in cursive script, appearing to read "W. Lee Evey".
W. Lee Evey

Enclosure



OCT 13 1995

TO: All Prospective Prime and Subcontractor Candidates

FROM: Contracting Officer, Space Flight Operations Contract

SUBJECT: Release of Draft Request for Proposal (DRFP),
Space Flight Operations Contract (SFOC)

The DRFP for above referenced solicitation will be released on Wednesday, November 8, 1995. Concurrent with release of the draft solicitation, an industry briefing will be held at Marshall Space Flight Center, Building 4200, Morris Auditorium, at 9:00 A.M., to explain salient features of the solicitation. Attendance will be limited to three representatives per firm. Those companies wishing to attend the industry briefing are requested to notify the undersigned by not later than Friday, November 3, 1995. Notifications may be faxed to (205) 544-9133 or mailed to the following address:

Marshall Space Flight Center
GP12/SB-SFOC (Mr. Evey)
Marshall Space Flt Ctr, AL 35812

Scheduled site visits to NASA field installations are expected to commence November 13, 1995 and details will be provided to you by November 1.

Interested parties who do not plan on attending the industry briefing and have not yet identified themselves as prime or subcontractor candidates may receive a copy of the solicitation by written request to the address or fax number shown above.

A Vendor Library, located in Room 312 of Building 4202, Marshall Space Flight Center, AL, will be open to all interested parties, by appointment only, 7:30 A.M. to 5:00 P.M. CST, Monday through Friday (except holidays) beginning October 23, 1995. Appointments may be made by contacting Mr. Michael J. McLean, (205) 544-0397 or Ms. Vicki Owens, (205) 544-0316. The library contains copies of Shuttle-related contract (including those to be included in the SFOC), Shuttle baseline technical documentation, and pertinent NASA field center-specific policies and procedures.

Please direct any questions you may have to Connie Poole, (205) 961-0375.

W. Lee Evey

10 83075888 P. 34

Description

CBD Issue: 10/17/1995 *(Regular synopsis section)*

NASA, George C. Marshall Space Flight Center, Procurement Office, Marshall Space Flight Center, AL 35812

Category 19 -- SPACE FLIGHT OPERATIONS CONTRACT SOL RFP 8-SSP-SEB DUE 112495 POC
Contact Mr. Walker Lee Evey/GP12SB/SSP/Attn: Space Flight Operations Contract
DRAFT RFP AVAILABLE FOR INDUSTRY COMMENT -- NASA is seeking comments from
interested parties regarding its draft RFP for the Space Flight Operations
Contract (SFOC). The draft RFP will be released on November 8, 1995,
concurrently with a briefing to industry explaining its content. Comments must
be received no later than 5:00 PM CST Friday, November 24, 1995. -- All
interested parties (limit of three representatives per firm) may attend the
industry briefing, to be held at NASA/George C. Marshall Space Flight Center,
Building 4200, Morris Auditorium at 9:00 AM CST, Wednesday, November 8, 1995.
One copy of the draft RFP will be provided during the briefing to each
organization present. Notifications of intent to attend the industry briefing
are required, for receipt by the Government no later than 5:00 PM CST Friday,
November 3, 1995, and should be sent to Mr. Evey at the above address or faxed
to his attention at 205/544-9133. -- Interested parties not attending the
industry briefing may obtain a copy of the draft RFP by submitting a written
request to Mr. Evey at the address or fax number above. Copies of the draft
RFP provided in response to written requests will be mailed no earlier than
Thursday, November 9, 1995. -- A Vendor Library, located in room 312/313 of
Building 4202, Marshall Space Flight Center, AL, will be open to all
interested parties 7:30 AM to 5:00 PM CST on Government workdays beginning
Monday, October 23, 1995, by appointment only. Phone Mr. Michael J. McLean,
205/544-0397, or Ms. Vicki Owens, 205/544-0316, during business hours for an
appointment. The library contains copies of Shuttle-related contracts
(including those to be included in the SFOC), Shuttle baseline technical
documentation, and pertinent NASA field center-specific policies and
procedures. (0286)

Return to Business Opportunities at MSFC

Description

CBD Issue: 10/18/1995 (*Special notice section*)

SPACE FLIGHT OPERATIONS CONTRACT Draft RFP 8-SSP-SEB. Due 112495. Contact NASA, George C. Marshall Space Flight Center, Procurement Office, Marshall Space Flight Center, AL 35812, Mr. Walker Lee Evey/GP12SB/SSP/Attn: Space Flight Operations Contract. Draft RFP available for industry comment -- NASA is seeking comments from interested parties regarding its draft RFP for the Space Flight Operations Contract (SFOC). The draft RFP will be released on November 8, 1995, concurrently with a briefing to industry explaining its content. Comments must be received no later than 5:00 PM CST Friday, November 24, 1995. All interested parties (limit of three representatives per firm) may attend the industry briefing, to be held at NASA/George C. Marshall Space Flight Center, Building 4200, Morris Auditorium at 9:00 AM CST, Wednesday, November 8, 1995. One copy of the draft RFP will be provided during the briefing to each organization present. Notifications of intent to attend the industry briefing are required, for receipt by the government no later than 5:00 PM CST Friday, November 3, 1995, and should be sent to Mr. Evey at the above address or faxed to his attention at 205/544-9133. Interested parties not attending the industry briefing may obtain a copy of the draft RFP by submitting a written request to Mr. Evey at the address or fax number above. Copies of the draft RFP provided in response to written requests will be mailed no earlier than Thursday, November 9, 1995. A Vendor Library, located in room 312/313 of Building 4202, Marshall Space Flight Center, AL, will be open to all interested parties 7:30 AM to 5:00 PM CST on Government workdays beginning Monday, October 23, 1995, by appointment only. Phone Mr. Michael J. McLean, 205/544-0397, or Ms. Vicki Owens, 205/544-0316, during business hours for an appointment. The library contains copies of Shuttle-related contracts (including those to be included in the SFOC), Shuttle baseline technical documentation, and pertinent NASA field center-specific policies and procedures.

Return to Business Opportunities at MSFC

1. N/A!!
2. 1023!!
3. 95!!
4. GP0751025!!
5. 35812!!
6. N/A!!
7. NASA, George C. Marshall Space Flight Center, Procurement Office, Marshall Space Flight Center, AL 35812!!
8. N/A -- SPECIAL NOTICE: SPACE FLIGHT OPERATIONS CONTRACT!!
9. RFP 8-SSP-SEB!!
10. N/A!!
11. Contact Mr. Walker Lee Evey/GP12SB/SSR/Attn: Space Flight Operations Contract!!
12. N/A!!
13. N/A!!
14. N/A!!
15. N/A!!
16. N/A!!
17. In a special notice which appeared on October 18, 1995, release of a draft RFP for the Space Flight Operations Contract (SFOC) concurrent with a briefing to industry on November 8 was announced. Both release of the draft RFP and the associated industry briefing are postponed. In the short time since the Space Flight Operations Contract to consolidate NASA space flight activities was announced, a great deal of work has gone into defining the content of the consolidated effort. NASA has determined that it needs an additional period of time to review the work done to date and to consider the most effective way to approach the consolidation. The Vendor Library located in Room 312 of Building 4202 is now open. Appointments may be made by contacting Mr. Michael J. McLean, (205) 544-0397 or Ms. Vicki Owens, (205) 544-0316.*****

M!!
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 . NASA, George C. Marshall Space Flight Center, Procurement Office, Marshall
 Space Flight Center, AL 35812!!
 . 18 -- SPACE FLIGHT OPERATIONS CONTRACT!!
 . RFP 8-SSP-SEB!!
 0. N/A!!
 1. Contact Mr. Walker Lee Evey/GP12SB/SSR/Attn: Space Flight Operations
 contract!!
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 5. N/A!!
 6. N/A!!
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 44-0316.*****

1. M!!
2. 1109!!
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12. N/A!!
13. N/A!!
14. N/A!!
15. N/A!!
16. N/A!!
17. MODIFICATION -- In a synopsis which appeared on October 30, 1995, release of a draft RFP for the Space Flight Operations Contract (SFOC) concurrent with a briefing to industry on November 8 was postponed. Release of the draft RFP and the related industry briefing for the referenced acquisition is hereby canceled. The NASA Administrator has decided that the agency will pursue a non-competitive contract with United Space Alliance, a joint venture formed by Rockwell International and Lockheed Martin Corporation. The decision to conduct a non-competitive negotiation was made on the basis of safety, manifest and schedule requirements in view of the agency's commitment to launch the first space station element in late 1997. NASA wishes to thank the firms who previously expressed interest in this acquisition.



SPACE SHUTTLE RESTRUCTURING INDUSTRY BRIEFING

J. Wayne Little

Associate Administrator, Office of Space Flight

Bryan O'Connor

Program Director, Space Shuttle Program



INDUSTRY BRIEFING AGENDA

- Introduction
- STS Program Description/Status
- Restructure Principles
- Implementation Status
- Principles for Contract Consolidation/Single Prime Contract
- Approach to Contract Consolidation
- Transition
- Expression of Industry Interest



INTRODUCTION

- **Why Restructure?**

- Logical Next Step in the Streamlining of the Program which has been Underway Since 1992
- Will Achieve more Focused Responsibility and Accountability by Contractors Including Single Contractor Accountability for Operations
- Will Strengthen Audit/Insight of Contractor Work to Increase Safety
- Will Reduce Operations Costs
- Will Focus Government Workforce on Research and Development
- Will Establish Framework for Possible Eventual Privatization

- **Planning and Control of the Transition Process is Critical**

- Today, the Government Role is Dominant in Program Management, Integration, Decision Making, and Insuring Overall Safety
- Transition to a Restructured Shuttle Program will be Carefully Planned and Controlled to Insure Safety
- Government will Manage the Single Prime Contract and will Maintain Sufficient Indepth Insight to Insure Safety



DESCRIPTION AND STATUS OF SHUTTLE PROGRAM

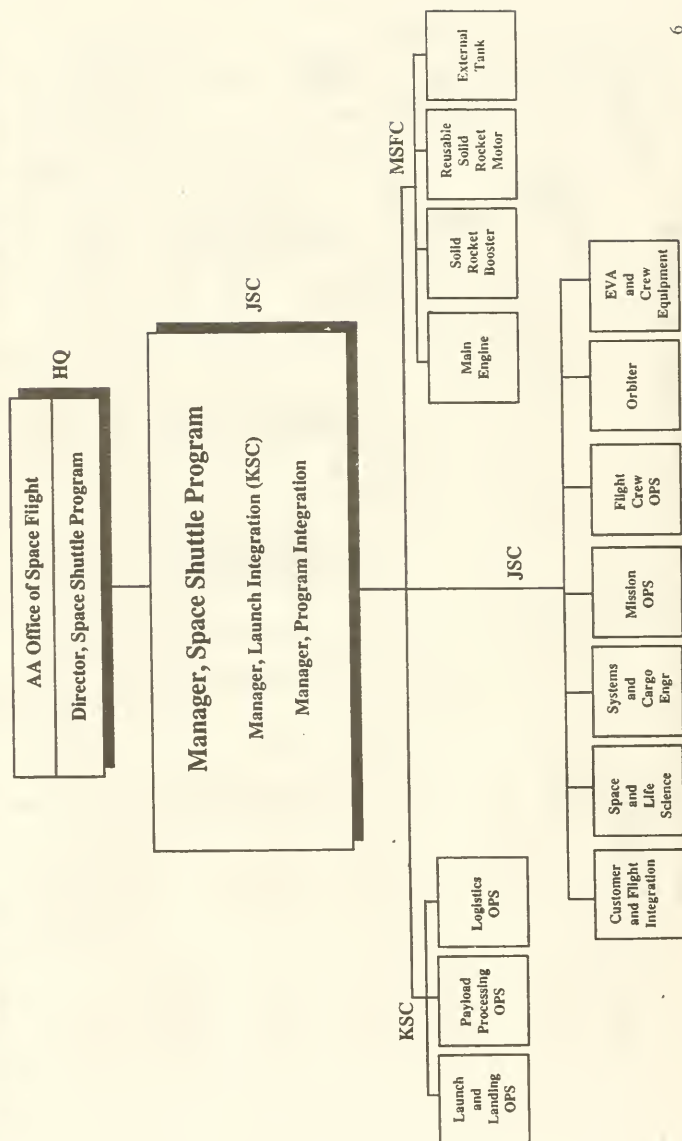


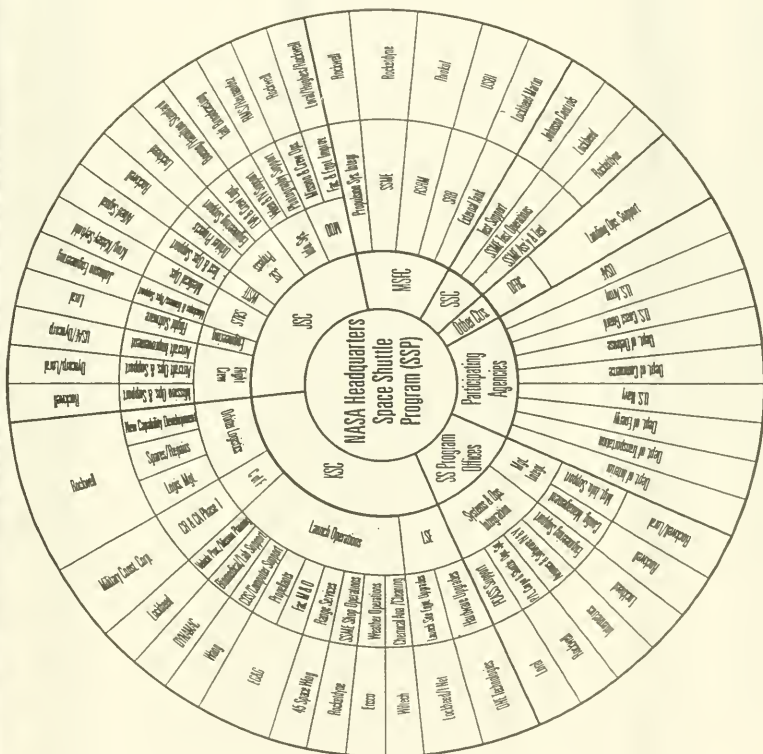
SPACE SHUTTLE PROGRAM

- **Responsible for Overall Management and Integration of All Elements of the Program**
 - Hardware Design, Qualification, and Manufacturing
 - » Orbiter, SSME, SRB, RSRM, ET
 - Flight Vehicle, Ground Systems, and Facilities Systems Engineering and Integration
 - Payload Integration, Processing, and Operations
 - Safety, Obsolescence, and Logistics Management
 - Vehicle Maintenance and Flight Preparation
 - Mission Planning, Training, and Execution



SPACE SHUTTLE ORGANIZATION







SPACE SHUTTLE PROGRAM MANAGEMENT EFFICIENCIES

Since the FY 1992 Budget to Congress

- Space Shuttle Program Process Improvement Review
- Red Team/Blue Team Implementation
- Mission Operations "Drain the Swamp" Initiatives
- Functional Workforce Review Results
- Contractor and NASA Organization Consolidations
- Incentive and Completion Form Contracts
- NASA/Contractor Agreements to Reduce the Cost of Doing Business (Rates, Changes in Contract Type, etc.)
- Zero Base Review



SPACE SHUTTLE PROGRAM SUMMARY OF CONTENT REDUCTIONS

Since the FY 1992 Budget to Congress

- Flight Rate Reduction from 10 to 7
- Deletion of Long Duration Orbiter Capability
- Deletion of CCMS II at KSC
- Deletion of Orbiter Structural Spares
- Cancellation of Advanced Solid Rocket Motor
- Deletion of Block II Enhanced Controller
- Deletion of Flight Support Motors



SPACE SHUTTLE PROGRAM SUMMARY OF CONTENT ADDITIONS

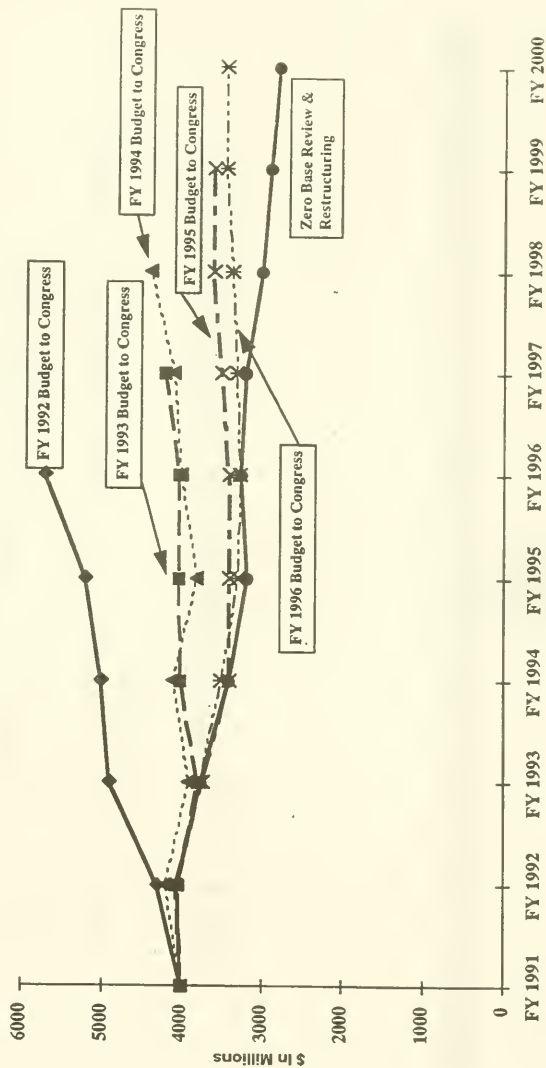
Since the FY 1992 Budget to Congress

- Super Lightweight Tank
- Space Station Integration Modifications
- Performance Upgrades (13,000 lbs. to Orbit; Including SLWT)
- Seven Flight Shuttle/MIR Program
- Environmental Compliance Requirements
- RSRM Enhancement Program
- Multifunction Electronics Display System
- Global Positioning System



SPACE SHUTTLE PROGRAM

FY 1992 - FY 1996 Budget to Congress FY 1997 Budget Recommendation





PROGRAM RESTRUCTURING



DEFINITIONS

Oversight – “Watchful Care or Management; Supervision”

Insight – “The Capability to Discern the True Nature of a Situation;
Penetration”



RESTRUCTURING PRINCIPLES

- Overriding Consideration is to Continue to Fly Shuttle Safely
- The Transition to a Restructured Shuttle Program will be Carefully Planned and Controlled to Insure Safety
- Contractor Accountability and Responsibility will be Maximized by Consolidating Contracted Efforts and Transition to a Single Prime Contractor for Management and Performance of Ground and Flight Operations and Integration
- Government Management will be Streamlined
- Government Workforce Involvement in Performing Routine Operations will be Minimized — Contractor will be Responsible and Accountable for these Functions
- Insight by Government Engineers and Managers for any Anomaly or "Out of Family" Occurrence in Processing, Production, Flight Preparation, or Flight will be in Sufficient Depth to Provide an Independent Assessment



RESTRUCTURING PRINCIPLES (CON'T)

- Government Role in Safety and Mission Assurance will be to Insure that Quality Hardware and Services are Delivered by Contractors with a Primary Emphasis on Insight, Audit, and Surveillance — These Functions will Continue to be Conducted Independent of the Program
- Program Requirements will be Reduced, but will be Consistent with Safe Flight Operations
- Government will Retain Responsibility for Managing Design and Development Activities — Design Modification will be Introduced in Block Changes
- Production of Flight Hardware/Software will be Transitioned to the Prime Contractor Consistent with the Maturity of the Design and Production Processes and the Degree of Continued Need for Government Management and Insight
- Shuttle and Space Station Operations will be Consolidated



IMPLEMENTATION STATUS

- All Government Workforce Tasks Being Assessed Relative to Principles
 - Each Project Reviewing each Current Government Task for Potential Elimination, Retention, or Transfer to Prime Contractor
 - Criteria:
 - » Rely on Contractors for Day-to-Day Operations
 - » Any Government Operations Tasks will be Agreed to In-Line Tasks with Defined Products
 - » Government Insight for Anomaly or "Out of Family" Independent Assessment will Continue
 - » Government Audit and Surveillance of Process, Production, Engineering, etc., will be Strengthened
 - » Development Tasks will Continue to be Managed by Government
 - » Production Tasks Transitioned Based on Decision/Process Maturity
 - » Initial Results Available — Additional Assessment Underway
 - » Transition Plans will be Developed by End of FY95



IMPLEMENTATION STATUS (CON'T)

IN-DEPTH REQUIREMENTS REVIEW IN PROGRESS

- Shuttle Master Verification (MVP) Plan — Turnaround Maintenance Requirements

Goals:

- Maintain Safety
- Minimize Work and Standardize Flows

Current Approach:

- Protect Functional Redundancy (Fault Tolerance)
- Assure Single Fault Tolerance of Critical Functions Every Flow/Flight and Check Out All Functional Paths Periodically

Proposed Approach:

- Utilize Program Experience Base to Determine Maintenance Requirements
 - » Develop Likelihood/Severity Matrix for Undisturbed Functions
 - » Disturbed Functions other than CRIT 3 will be Validated
 - » Checkout Required if Connector Quality/Improper Assembly is a Factor for Performance
- Assembly Requirements Based on Functional Criticality to Confirm Performance
- Invasive Testing will be Avoided



IMPLEMENTATION STATUS (CON'T)

MVP (CON'T)

LIKELIHOOD

Probable	No Checkout Required	Validation Each Flow and Checkout at Intervals	Checkout Each Flow	Not Allowed
Infrequent	No Checkout Required	Validation to Fail-Safe Each Flow and Checkout at Intervals	Validation Each Flow and Checkout at Intervals	Not Allowed
Remote	No Checkout Required	Checkout at Intervals	Validation Each Flow and Checkout at Intervals	Checkout Each Flow
Improbable	No Checkout Required	Checkout at Intervals	Checkout at Intervals	Validation Each Flow and Checkout at Intervals
	CRIT 3	CRIT IR3 +, 2R	CRIT IR2, IS, 2	CRIT 1

SEVERITY

Definitions:

- Probable — Will Occur Several Times in the Life of the Program (1 in 12 to 125 Flights)
- Infrequent — Likely to Occur Sometime in the Life of the Program (1 in 125 to 1,250 Flights)
- Remote — Unlikely, but Possible to Occur in the Life of the Program (1 in 1250 to 12,500 Flights)
- Improbable — So unlikely that it can be Assumed Occurrence may not be Experienced in the Life of the Program (Greater than 1 in 12,500 Flights)



IMPLEMENTATION STATUS (CON'T)

- **Other Requirements also under Review**
 - Failure Mode Effects Analysis/Critical Items List Philosophy Updated
 - » Allows for Operational Mitigation of Failure Effects
 - » Reduces Hardware Criticality (Operations vs. Design)
 - Launch Commit Criteria, Flight Rules, Flight Readiness Certification under Review
- **Plans to Transition to Revised Requirements Being Developed — Implemented over Next Year**



IMPLEMENTATION STATUS (CON'T)

- Safety and Mission Assurance Organization Working to Define Revised Roles and to Develop an Implementation Plan by End of FY95
- An Assessment Team Reviewed Shuttle and Space Station Operations Activities, Requirements, and Plans
 - Identified Efficiencies which are being Implemented by Program Offices
 - Indicated Advantages of Combined Space Station and Space Shuttle Mission Planning and Operations
 - Consolidation will be Implemented as a Part of Restructuring



CONTRACT RESTRUCTURE

Principles for Contract Consolidation/Single Prime Contract

- Single, Focused Responsibility for Management by Contractor
- Fee Structure to Include Incentives for Quality Hardware, Performance, and Schedule as well as Cost Performance – No Fee on Fee
- Design Knowledge and Expertise for Major Hardware Elements must be Maintained – A Single Contractor must have Full Responsibility for Each Major Hardware Element (e.g., Engineering, Production, Processing, Integration)
- Ongoing Streamlining Provisions and Changes to Requirements and Operating Procedures Leading to Cost Reductions will be Incorporated into the Initial Contract Baseline
- Contract Restructuring will Establish Lowest Cost and Most Efficient Sites and Facilities to Conduct Program Activities and will Consolidate as Necessary to Achieve



CONTRACT RESTRUCTURE (CON'T)

Principles (Con't)

- NASA will Continue to have Direct Access for Auditing and Surveillance of Major Subcontractor and Lower Tier Subcontractors Products (In Conjunction with the Prime Contractor)
- Achieve Maximum Consolidation of Business Elements (Payroll, Legal, Contracts, etc.)
- NASA's Involvement, i.e., Anomaly Resolution, "Out of Family" Assessments, Services (Launch, Astronauts, Mission OPS, etc.), Audits, and Surveillance will be Defined
- Offerors will Provide Recommendations for a Transition which Maintains Safe Operations
- Offerors will Provide Recommendations for Privatization for all or Parts of the Restructured Effort



APPROACH TO CONTRACT CONSOLIDATION

Current Structure – 85 Contracts with 56 Contractors, Managed by NASA, Either Fully or Partially Funded by the Shuttle Program

- 50 Contracts with Costs of Less than \$5M Per Year
- 22 Contracts with Costs of Greater than \$20M Per Year

Consolidated Structure – All Contracted Efforts for Routine Operations Would be Consolidated Under a Single Prime Contract, Using the Following Guidelines

- Contracts Involving Significant Development Activities will Continue to be Managed Separately by NASA
- Contracts Providing Production of Flight Hardware/Software will be Transitioned to the Prime Contractor Consistent with the Maturity of the Design and Production Processes and the Degree of Continued Need for Government Management and Insight
- Selected Contracts which Provide Independent Assessment of the Program will be Managed Separately by NASA
- Contracts with Multiple Funding Sources other than Shuttle and Station Operations will be Restructured Based on their Space Flight Operations Content

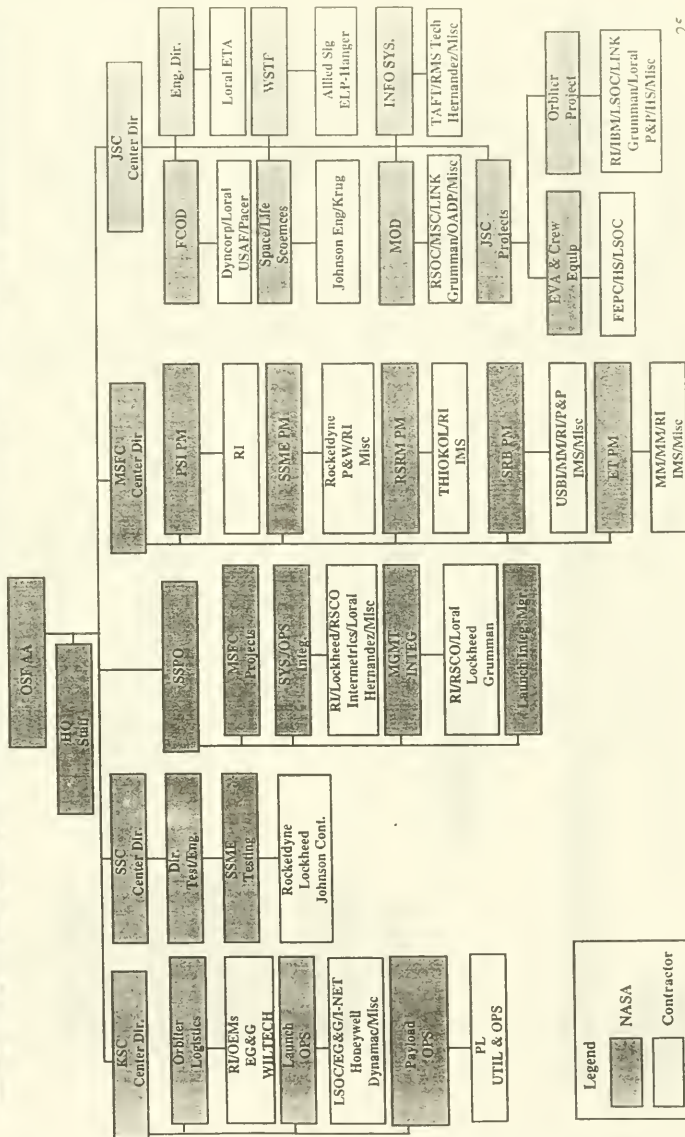


APPROACH TO CONTRACT CONSOLIDATION (CON'T)

- Contracts which Support Multiprogram-use Facilities may Continue to be Managed by NASA
- Operational Portions of Major Hardware Contracts will be Directed Subcontracts with Added Responsibility for Processing at KSC
- Selected Contracts will be Novated or Transitioned to the Prime as Directed
- Subcontracts Consistent with Program Priorities and Procurement Regulations

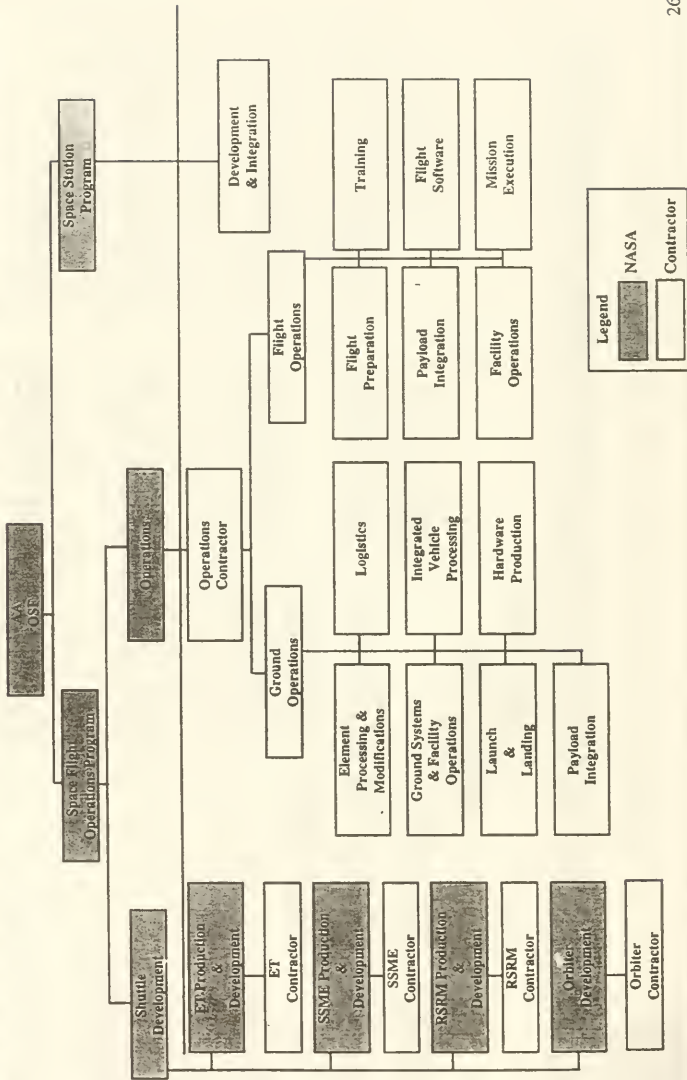


CURRENT SPACE SHUTTLE PROGRAM



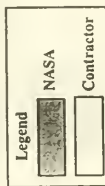
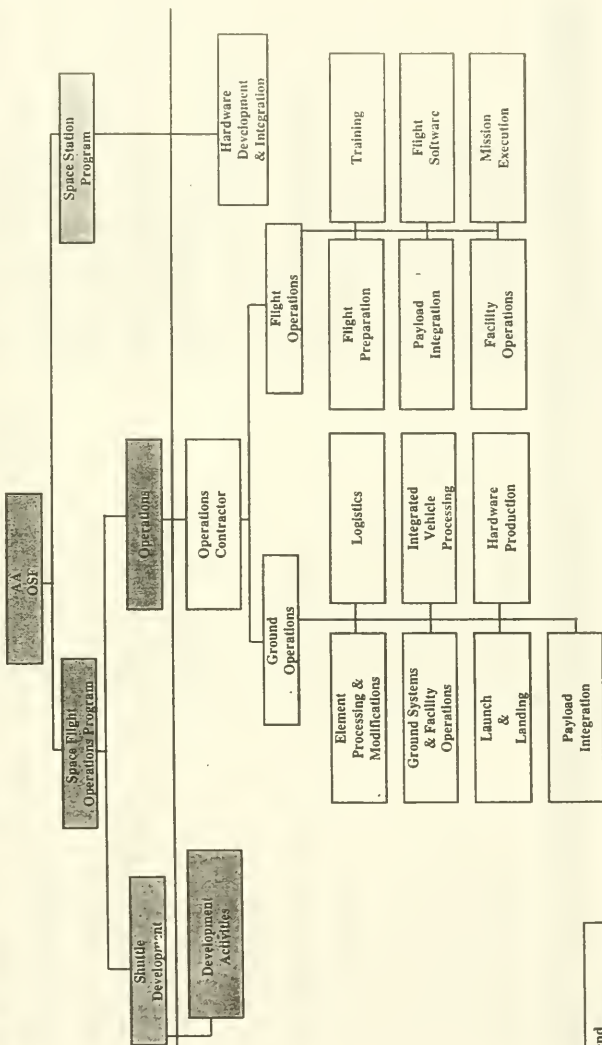


HUMAN SPACE FLIGHT STRUCTURE AT PRIME CONTRACT AWARD





HUMAN SPACE FLIGHT STRUCTURE FOLLOWING TRANSITION





HUMAN SPACE FLIGHT RESTRUCTION FLIGHT & MISSION OPERATIONS*

<u>FLIGHT PREP.</u>	<u>TRAINING</u>	<u>FACILITY OPS</u>
Traj/Flight Design	Curriculum Dev.	Flight Prep Facilities
Flight Planning	Training Material	Flight SW Facilities
Flight Rule	Flight Controller	MCC & Support
Flight Data File	Flight Crew	Training Facilities
Payload Integration	EVA Training	EVA Training Facilities
Data Storage		
<u>FLIGHT</u>	<u>MISSION EXEC.</u>	<u>PAYLOAD</u>
<u>SOFTWARE (S/W)</u>	<u>INTEGRATION</u>	
S/W OI Building	Flight Controllers	Integrated
S/W Reconfig.	Flight Directors	Program Planning
SW Test	Flight Crew	Planning/Layout
S/W IV & V	Payload Customer Support	Baselines
	Backroom Support	



HUMAN SPACE FLIGHT RESTRUCTURE GROUND OPERATIONS*



<u>LAUNCH/RECOVERY</u>	<u>ELEMENT PROCESS</u>	<u>GRND SYS & FACIL</u>
Launch Countdown	SRM	Operations
LCC Support	SRB	Maintenance
PAD Operations	ET	
SRM/SRB Recovery	Orbiter	<u>SRM/RSRM/ET/</u>
Orbiter Recovery	SSME	<u>SSME/ORBITER PROD.</u>
Range Safety		Production of
Weather		Flight Elements
FCE Stowage		

<u>INTEG VEH PROCESS</u>	<u>PROCESS. LOGISTICS</u>	<u>PL INTEGRATION</u>
Element Stacking	Warehouse	Customer Interface
Payload Install	Receive/Issue	Payload Preps
Integrated Tests	Transportation	Transport
Launch Preps	Shops/Labs	Logistics
	Procurement	Experiment Stowage

* Examples-Not all Inclusive



IMPLEMENTATION STATUS (CON'T)

Government Roles Being Defined (Examples)

- Program Management
- Program Control
- Process Audit/Surveillance
- "Out of Family"/Anomaly Independent Assessment – Insight
- Manifesting
- Management of Development
- Critical Process Change Approval
- Selected Functions (Examples)
 - Flight Directors
 - Flight Crews
 - Flight Surgeons
 - Launch Directors
- Maintain Expertise in Engineering to Insure Execution of Assigned Roles
- Government-to-Government Interfaces
- Commit to Flight



TRANSITION

A Carefully Planned and Controlled Transition is Essential.
Following are Key Elements and Timeframes:

- Government Task Transition - 4 Mos. to 3 Years
- Requirements Changes - 4 Mos. to 1 Year
- Prime Contractor Selection - 13 to 15 Mos.
- Transition to Single Prime - 2 to 3 Years
- Production Transition - 1 to 5 Years

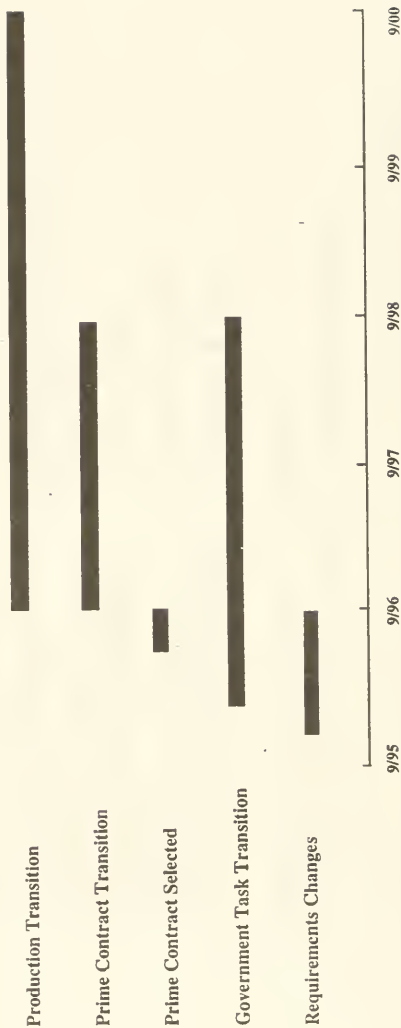
A Key Transition Element is Establishing a Management and Technical Team within the Selected Prime Contract to Assume Vital Roles Performed by NASA. We Anticipate that some Current NASA Personnel will be Desired by the Prime. We will Seek Approval to Allow this Migration of Personnel where Required.



TRANSITION



A Carefully Planned and Controlled Transition is Essential.



Timeframe for Transition



EXPRESSION OF INDUSTRY INTEREST

- Expressions of Industry Interest and Capability to Serve as the Single Prime Contractor for Managing and Performing Operations and Program Integration are Solicited
- Written Response Should be Provided by September 11, 1995,
To: Mr. Walker Lee Evey
Code GP-12/Marshall Space Flight Center
Huntsville, AL 35812
Attn: Space Flight Operations Restructure
Fax Number: (205) 544-8353



EXPRESSION OF INDUSTRY INTEREST (CON'T)

- **Response Should Include the Following (25 Page Maximum):**
 - A Statement of Interest in Managing and Performing Operations and Program Integration as a Single Prime Contractor
 - Information which Substantiates the Capability of the Offeror to Manage and Perform Operations and Program Integration for Space Flight Operations
 - Preliminary Concepts for Accommodating "Principles for Contract Consolidation/Single Prime Contract"
 - Preliminary Concepts for a Safe Transition from the Current Management Structure to a Single Prime Contract
 - Preliminary Concepts for Eventual Privatization of all or Parts of Space Flight Operations (Flight and/or Ground)
- **Oral Presentations will be Arranged upon Request for Prime Contractor Candidates**
- **Comments on Any Element of Restructuring are Welcomed**

Mr. SENSENBRENNER. Thank you very much, Mr. Goldin.

The first question is, do you have a copy of the Joint Venture Agreement between Rockwell and Lockheed-Martin?

Mr. GOLDIN. I believe our legal counsel received a copy yesterday. Is that correct?

Mr. SENSENBRENNER. Can you submit that for the record?

Mr. GOLDIN. Yes, sir.

Mr. SENSENBRENNER. Because we asked Rockwell yesterday to furnish us a copy of the joint venture agreement, and as of the time I convened this hearing, we had not received it.

Mr. GOLDIN. Mr. Frankle received it yesterday, and we will get it to you as soon as possible.

Mr. SENSENBRENNER. Thank you.

Without objection, I will include a copy of this agreement in the record at this point.

[The following information was received for the record:]

MASTER AGREEMENT

Between

ROCKWELL INTERNATIONAL CORPORATION

and

LOCKHEED MARTIN CORPORATION

Dated as of November 22, 1995

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Schedule 3.1(c) Rockwell Consents and Approvals

Schedule 3.2(c) LMC Consents and Approvals

MASTER AGREEMENT

THIS MASTER AGREEMENT (this "Agreement"), dated as of November 22, 1995, by and between Rockwell International Corporation, a Delaware corporation ("Rockwell") and Lockheed Martin Corporation, a Maryland corporation ("LMC").

W I T N E S S E T H :

WHEREAS, the National Aeronautics and Space Administration ("NASA") has determined to consolidate essentially all contracts relating to NASA's Human Space Flight Operations Program (as defined in the Operating Agreement, as hereinafter defined) under one Space Flight Operations Contract with NASA (such contract, together with any replacements thereof, substitutions therefor and successors thereto, the "Prime Contract") in order to achieve greater efficiency, cost reductions and flight safety;

WHEREAS, Rockwell and LMC are parties to significant prime contracts with NASA in connection with NASA's Human Space Flight Operations Program and NASA, Rockwell and LMC have concluded that by combining their respective capabilities Rockwell and LMC can provide the best resources available to meet NASA's requirements and objectives in respect of the Prime Contract; and

WHEREAS, Rockwell and LMC desire to enter into a joint venture for the purpose of entering into and performing the Prime Contract and to subcontract with Rockwell, LMC and other parties (as provided for in the Operating Agreement) to satisfy NASA's requirements under the Prime Contract.

NOW, THEREFORE, in consideration of the premises and the mutual covenants herein, the parties agree as follows:

ARTICLE I

ESTABLISHMENT OF LIMITED LIABILITY COMPANY

Section 1.1 Limited Liability Company. The joint venture contemplated by this Agreement shall be a Delaware limited liability company known as United Space Alliance, LLC (the "Company") heretofore formed on behalf of Rockwell Space Alliance Company, a Delaware corporation ("RSAC") and an indirect wholly-owned subsidiary of Rockwell held through Rockwell Space Operations Company, a Delaware corporation ("RSOC") and a direct wholly-owned subsidiary of Rockwell, and Lockheed Martin Space Alliance Company, a Delaware corporation ("LMSAC") and an indirect wholly-owned subsidiary of LMC held through Lockheed Space Operations Company, a Nevada corporation ("LSOC") and a direct wholly-owned subsidiary of Lockheed Corporation, a Delaware

corporation and a direct wholly-owned subsidiary of LMC (RSAC and LMSAC are herein sometimes referred to collectively as the "Members"). Contemporaneously with the execution and delivery of this Agreement, Rockwell shall cause RSAC and LMC shall cause LMSAC to execute a limited liability company operating agreement (the "Operating Agreement") in substantially the form of Exhibit A attached hereto. Rockwell and LMC each shall at all times cause RSAC and LMSAC, respectively, to exercise all management rights with respect to the Company in such a manner as to ensure compliance with the provisions of this Agreement and the Operating Agreement.

Section 1.2 Company Business. Subject to the provisions of the Operating Agreement, Rockwell and LMC contemplate that:

(a) The business of the Company shall be to perform all phases of the Human Space Flight Operations Program. It is the further intention of Rockwell and LMC that the Company will have, in its initial phase, approximately \$600 million in contract revenues (based on 1995 fiscal year revenues) to come in approximately equal portions from contract effort currently performed by RSOC and by LSOC, together with the facility and other resources used to perform the contracts associated with those

revenues, and approximately 6,000 employees to come principally from RSOC and LSOC.

(b) Each of RSAC and LMSAC shall make contributions to the capital of the Company pursuant to the terms and provisions of Operating Agreement. The method of contribution may include one or more contract novation agreements with NASA, amendments to existing contracts, and/or the execution and delivery of the Prime Contract and related contracts, as RSAC, LMSAC and NASA may agree.

Section 1.3 Other Activities. Subject to Section 6.8, nothing in this Agreement or the Operating Agreement shall be construed to restrict Rockwell or LMC or any of their respective Affiliates (as defined in the Operating Agreement) from performing other contracts, or competing and bidding on future contracts, for NASA; provided, however, that work designated by NASA to be performed as part of the Human Space Flight Operations Program shall, unless designated otherwise by NASA, be performed by Rockwell, LMC and their respective Affiliates only by and through the Company, including under subcontracts awarded by the Company.

Section 1.4 Compliance With Laws. It is the intention of Rockwell and LMC that by entering into this Agreement, and in causing RSAC and LMSAC to enter into the Operating Agreement, each of Rockwell, LMC, RSOC, LSOC,

RSAC, LMSAC and the Company shall comply fully with all applicable laws and regulations, including Sections 1 and 2 of the Sherman Act, 15 U.S.C. §§ 1, 2, Section 7 and 7A of the Clayton Act, 15 U.S.C. §§ 18, 18A, and Section 5 of the Federal Trade Commission Act, 15 U.S.C. § 45 (collectively, the "Antitrust Laws").

ARTICLE II

GUARANTIES

Section 2.1 Guaranty of Rockwell. Rockwell shall, contemporaneously with the execution and delivery of this Agreement, execute and deliver to LMSAC and LMC a Guaranty (the "Rockwell Guaranty") of the performance by RSAC of certain of its obligations under the Operating Agreement and an indemnification by Rockwell against losses caused by RSAC's failure to perform such obligations. The Rockwell Guaranty shall be in substantially the form of Exhibit B attached hereto. The performance by LMSAC of its obligations under the Operating Agreement and by LMC of its obligations under this Agreement are subject to and conditioned upon the Rockwell Guaranty being a valid and binding obligation of Rockwell enforceable against Rockwell in accordance with its terms (subject to applicable bankruptcy, insolvency, reorganization, moratorium and similar laws affecting creditors' rights generally and to

general principles of equity) at the date of the Operating Agreement and until such time as either (i) RSAC transfers its entire interest in the Company in accordance with the terms of the Operating Agreement or (ii) Rockwell transfers all of the outstanding capital stock of RSAC (other than to a Permitted Transferee, as defined below and permitted hereby) in accordance with the terms of this Agreement.

Section 2.2 Guaranty of LMC. LMC shall, contemporaneously with the execution and delivery of this Agreement, execute and deliver to RSAC and Rockwell a Guaranty (the "LMC Guaranty") of the performance by LMSAC of certain of its obligations under the Operating Agreement and an indemnification by LMC against losses caused by LMSAC's failure to perform such obligations. The LMC Guaranty shall be in substantially the form of Exhibit C attached hereto. The performance by RSAC of its obligations under the Operating Agreement and by Rockwell of its obligations under this Agreement are subject to and conditioned upon the LMC Guaranty being a valid and binding obligation of LMC enforceable against LMC in accordance with its terms (subject to applicable bankruptcy, insolvency, reorganization, moratorium and similar laws affecting creditors' rights generally and to general principles of equity) at the date of the Operating Agreement and until such time as either (i) LMSAC transfers its entire interest

in the Company in accordance with the terms of the Operating Agreement or (ii) LMC transfers all of the outstanding capital stock of LMSAC (other than to a Permitted Transferee, as permitted hereby) in accordance with the terms of this Agreement.

ARTICLE III

REPRESENTATIONS AND WARRANTIES

Section 3.1 By Rockwell. Rockwell hereby represents and warrants to LMC as follows:

(a) Organization. Rockwell is a corporation duly organized, validly existing and in good standing under the laws of the State of Delaware and has full corporate power and authority to own and operate its assets and properties and to carry on its business as presently being conducted and as presently proposed to be conducted (including in the manner contemplated by this Agreement) and is duly qualified to do business and is in good standing in all jurisdictions in which the ownership or occupancy of its properties or its activities presently make such qualification necessary, except where the failure to so qualify would not have a material adverse effect upon its business, properties or assets.

(b) Authority. Rockwell has all requisite corporate power and authority to execute and deliver this

Agreement and the Rockwell Guaranty, to perform its obligations hereunder and thereunder and to consummate the transactions contemplated hereby and thereby. The execution, delivery and performance of this Agreement and the Rockwell Guaranty by Rockwell and the consummation by Rockwell of the transactions contemplated hereby and thereby have been duly and validly authorized and approved by all requisite corporate proceedings of Rockwell. This Agreement and the Rockwell Guaranty have been duly and validly executed and delivered by Rockwell and each constitutes a legal, valid and binding obligation of Rockwell, enforceable against Rockwell in accordance with its terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium and similar laws affecting creditors' rights generally and to general principles of equity.

(c) Consents and Approvals. Except as set forth in Schedule 3.1(c) attached hereto and made a part hereof, all authorizations, approvals and consents, if any, required to be obtained from, and all registrations, declarations and filings, if any, required to be made with, all governmental authorities and regulatory bodies to permit Rockwell to execute and deliver this Agreement and the Rockwell Guaranty and to perform its obligations hereunder and thereunder have been obtained or made, as the case may be, and all such authorizations, approvals, consents, registrations,

declarations and filings are in full force and effect. All terms and conditions contained in, or existing in respect of, such authorizations, approvals, consents, registrations, declarations and filings have been, to the extent necessary prior to the date of execution and delivery of this Agreement and the Rockwell Guaranty, duly satisfied and performed.

(d) No Violations or Conflicts. The execution, delivery and performance of this Agreement and the Rockwell Guaranty by Rockwell do not and will not (i) violate or conflict with any provision of, or result in the breach of, any applicable statute, law, rule or regulation of any governmental authority or regulatory body, the Certificate of Incorporation or By-laws of Rockwell, or any contract, agreement, indenture or other instrument or obligation to which Rockwell is a party or by which Rockwell or any of its assets is bound, or of any order, judgment, writ, injunction, award, ruling or decree applicable to Rockwell or any of its assets, or terminate or result in the termination of any such contract, agreement, indenture, instrument or obligation or (ii) constitute an event which, after notice or lapse of time or both, would result in any such violation, conflict, breach or termination or result in a violation or revocation of any permit from any governmental authority, regulatory body or other third

party, except to the extent that the occurrence of any of the foregoing would not individually or in the aggregate have a material adverse effect on the ability of Rockwell to consummate the transactions contemplated by this Agreement or the Rockwell Guaranty.

(e) Financial Statements. Rockwell has delivered to LMC a true and complete copy of the audited financial statements of Rockwell and its consolidated subsidiaries for the fiscal year ended September 30, 1994, and a true and complete copy of the unaudited financial statements of Rockwell and its consolidated subsidiaries for the fiscal quarter ended June 30, 1995. Such financial statements present fairly in all material respects the consolidated financial condition, results of operations and cash flows of Rockwell and its consolidated subsidiaries as of such dates and for the periods then ended and have been prepared in accordance with generally accepted accounting principles, except that the unaudited financial statements do not contain footnotes and are subject to normal year-end adjustments. Since June 30, 1995, there has been no material adverse change in the business, financial condition or results of operations of Rockwell which would adversely affect in any material respect the ability of Rockwell to perform its obligations under this Agreement or the Rockwell Guaranty.

(f) Litigation. There is no action, suit or proceeding pending, or to the knowledge of Rockwell threatened, against Rockwell which questions the validity of this Agreement or the Rockwell Guaranty or any action taken or to be taken pursuant to or in connection with this Agreement or the Rockwell Guaranty or which would, if adversely determined, affect in any material respect the ability of Rockwell to perform its obligations hereunder or thereunder.

(g) Operating Agreement. All representations and warranties made by RSAC pursuant to Section 11.1 of the Operating Agreement are true and correct, and all representations and warranties to be made by RSAC pursuant to Section 11.2 of the Operating Agreement will be true and correct as and when made.

Section 3.2 By LMC. LMC hereby represents and warrants to Rockwell as follows:

(a) Organization. LMC is a corporation duly organized, validly existing and in good standing under the laws of the State of Maryland and has full corporate power and authority to own and operate its assets and properties and to carry on its business as presently being conducted and as presently proposed to be conducted (including in the manner contemplated by this Agreement) and is duly qualified to do business and is in good standing in all jurisdictions

in which the ownership or occupancy of its properties or its activities presently make such qualification necessary, except where the failure to so qualify would not have a material adverse effect upon its business, properties or assets.

(b) Authority. LMC has all requisite corporate power and authority to execute and deliver this Agreement and the LMC Guaranty, to perform its obligations hereunder and thereunder and to consummate the transactions contemplated hereby and thereby. The execution, delivery and performance of this Agreement and the LMC Guaranty by LMC and the consummation by LMC of the transactions contemplated hereby and thereby have been duly and validly authorized and approved by all requisite corporate proceedings of LMC. This Agreement and the LMC Guaranty have been duly and validly executed and delivered by LMC and each constitutes a legal, valid and binding obligation of LMC, enforceable against LMC in accordance with its terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium and similar laws affecting creditors' rights generally and to general principles of equity.

(c) Consents and Approvals. Except as set forth in Schedule 3.2(c) attached hereto and made a part hereof, all authorizations, approvals and consents, if any, required

to be obtained from, and all registrations, declarations and filings, if any, required to be made with, all governmental authorities and regulatory bodies to permit LMC to execute and deliver this Agreement and the LMC Guaranty and to perform its obligations hereunder and thereunder have been obtained or made, as the case may be, and all such authorizations, approvals, consents, registrations, declarations and filings are in full force and effect. All terms and conditions contained in, or existing in respect of, such authorizations, approvals, consents, registrations, declarations and filings have been, to the extent necessary prior to the date of execution and delivery of this Agreement and the LMC Guaranty, duly satisfied and performed.

(d) No Violations or Conflicts. The execution, delivery and performance of this Agreement and the LMC Guaranty by LMC do not and will not (i) violate or conflict with any provision of, or result in the breach of, any applicable statute, law, rule or regulation of any governmental authority or regulatory body, the Certificate of Incorporation or By-laws of LMC, or any contract, agreement, indenture or other instrument or obligation to which LMC is a party or by which LMC or any of its assets is bound, or of any order, judgment, writ, injunction, award, ruling or decree applicable to LMC or any of its assets, or

terminate or result in the termination of any such contract, agreement, indenture, instrument or obligation or

(ii) constitute an event which, after notice or lapse of time or both, would result in any such violation, conflict, breach or termination or result in a violation or revocation of any permit from any governmental authority, regulatory body or other third party, except to the extent that the occurrence of any of the foregoing would not individually or in the aggregate have a material adverse effect on the ability of LMC to consummate the transactions contemplated this by this Agreement or the LMC Guaranty.

(e) Financial Statements. LMC has delivered to Rockwell a true and complete copy of the audited consolidated financial statements of LMC and its subsidiaries for the fiscal year ended December 31, 1994, and a true and complete copy of the unaudited consolidated financial statements of LMC and its subsidiaries for the fiscal quarter ended September 30, 1995. Such financial statements present fairly in all material respects the consolidated financial condition, results of operations and cash flows of LMC and its subsidiaries as of such dates and for such periods then ended and have been prepared in accordance with generally accepted accounting principles, except that the unaudited financial statements do not contain footnotes and are subject to normal year-end

adjustments. Since September 30, 1995, there has been no material adverse change in the business, financial condition or results of operations of LMC which would adversely affect in any material respect the ability of LMC to perform its obligations under this Agreement or the LMC Guaranty.

(f) Litigation. There is no action, suit or proceeding pending, or to the knowledge of LMC threatened, against LMC which questions the validity of this Agreement or the LMC Guaranty or any action taken or to be taken pursuant to or in connection with this Agreement or the LMC Guaranty or which would, if adversely determined, affect in any material respect the ability of LMC to perform its obligations hereunder or thereunder.

(g) Operating Agreement. All representations and warranties made by LMSAC pursuant to Section 11.3 of the Operating Agreement are true and correct, and all representations and warranties to be made by LMSAC pursuant to Section 11.4 of the Operating Agreement will be true and correct as and when made.

Section 3.3 Survival. All representations and warranties made herein shall survive the execution and delivery of this Agreement for a period of three (3) years after any termination of this Agreement.

ARTICLE IVCONDITIONS TO INITIAL CLOSING

Section 4.1 Conditions to Obligations of Rockwell and RSAC. The obligations of Rockwell and RSAC to consummate the transactions contemplated by this Agreement and the Operating Agreement are subject to the satisfaction on or before the Initial Closing Date (as defined in the Operating Agreement) of the following conditions:

(a) Representations and Warranties True on Initial Closing Date. The representations and warranties of LMC contained in this Agreement and of LMSAC contained in the Operating Agreement shall be true on the date of execution hereof and on the Initial Closing Date as though such representations and warranties were made at and as of such time.

(b) Performance. Each of LMC and LMSAC shall have duly performed and complied with all agreements and conditions required by this Agreement and the Operating Agreement to be performed or complied with by it on or prior to the Initial Closing Date.

(c) General Counsel Determination. The General Counsel of Rockwell or his designee shall have made an independent determination that none of this Agreement, the Operating Agreement or the transactions contemplated hereby

or thereby, violate or have the reasonable potential of violating any of the Antitrust Laws.

(d) Compliance Certificate. Each of LMC and LMSAC shall have delivered to Rockwell a certificate, dated the Initial Closing Date and signed by a duly authorized officer of LMC or LMSAC, as the case may be, certifying as to the fulfillment of the conditions specified in the foregoing subsections (a), (b) and (c).

Section 4.2 Conditions to Obligations of LMC and LMSAC. The obligations of LMC and LMSAC to consummate the transactions contemplated by this Agreement and the Operating Agreement are subject to the satisfaction on or before the Initial Closing Date of the following:

(a) Representations and Warranties True on Initial Closing Date. The representations and warranties of Rockwell contained in this Agreement and of RSAC contained in the Operating Agreement shall be true on the date of execution hereof and on the Initial Closing Date as though such representations and warranties were made at and as of such time.

(b) Performance. Each of Rockwell and RSAC shall have duly performed and complied with all agreements and conditions required by this Agreement and the Operating Agreement to be performed or complied with by it on or prior to the Initial Closing Date.

(c) General Counsel Determination. The General Counsel of LMC or his designee shall have made an independent determination that none of this Agreement, the Operating Agreement or the transactions contemplated hereby or thereby, violate or have the reasonable potential of violating any of the Antitrust Laws.

(d) Compliance Certificate. Each of Rockwell and RSAC shall have delivered to LMC a certificate, dated the Initial Closing Date and signed by a duly authorized officer of Rockwell or RSAC, as the case may be, certifying as to the fulfillment of the conditions specified in the foregoing subsections (a), (b) and (c).

ARTICLE V

CONDITIONS TO SUBSEQUENT CLOSINGS

Section 5.1 Conditions to Obligations of Rockwell and RSAC. The obligations of Rockwell and RSAC to consummate the transactions contemplated by this Agreement and the Operating Agreement are subject to the satisfaction on or before each Subsequent Closing Date (as defined in the Operating Agreement) of the following conditions:

(a) Representations and Warranties True on Subsequent Closing Date. The representations and warranties of each of LMC contained in this Agreement and of LMSAC contained in the Operating Agreement shall be true on such

Subsequent Closing Date as though such representations and warranties were made at and as of such time.

(b) Performance. Each of LMC and LMSAC shall have duly performed and complied with all agreements and conditions required by this Agreement and the Operating Agreement to be performed or complied with by it on or prior to such Subsequent Closing Date.

(c) Compliance Certificate. Each of LMC and LMSAC shall have delivered to Rockwell a certificate, dated such Subsequent Closing Date and signed by a duly authorized officer of LMC or LMSAC, as the case may be, certifying as to the fulfillment of the conditions specified in the foregoing subsections (a) and (b).

(d) Adverse Changes. Since the date of execution of this Agreement, there shall not have occurred any damage, destruction, loss or other event (whether or not covered by insurance) which materially adversely affects the assets and interests to be transferred and assigned by LMSAC to the Company on such Subsequent Closing Date, or which would materially adversely affect the business of the Company.

Section 5.2 Conditions to Obligations of LMC and LMSAC. The obligations of LMC and LMSAC to consummate the transactions contemplated by this Agreement and the Operating Agreement are subject to the satisfaction on or before each Subsequent Closing Date of the following:

(a) Representations and Warranties True on Subsequent Closing Date. The representations and warranties of each of Rockwell contained in this Agreement and of RSAC contained in the Operating Agreement shall be true on such Subsequent Closing Date as though such representations and warranties were made at and as of such time.

(b) Performance. Each of Rockwell and RSAC shall have duly performed and complied with all agreements and conditions required by this Agreement and the Operating Agreement to be performed or complied with by it on or prior to such Subsequent Closing Date.

(c) Compliance Certificate. Each of Rockwell and RSAC shall have delivered to LMC a certificate, dated such Subsequent Closing Date and signed by a duly authorized officer of Rockwell or RSAC, as the case may be, certifying as to the fulfillment of the conditions specified in the foregoing subsections (a) and (b).

(d) Adverse Changes. Since the date of execution of this Agreement, there shall not have occurred any damage, destruction, loss or other event (whether or not covered by insurance) which materially adversely affects the assets and interests to be transferred and assigned by RSAC to the Company on such Subsequent Closing Date, or which would materially adversely affect the business of the Company.

ARTICLE VITRANSFERS

Section 6.1 Transfer of Capital Stock of a Member. Rockwell shall cause RSOC not to sell, transfer, assign or otherwise dispose of any of the outstanding capital stock of RSAC, and LMC shall cause LSOC not to sell, transfer, assign or otherwise dispose of any of the outstanding capital stock of LMSAC (each a "Transfer" and the Member the stock of which is the subject of the Transfer, the "Transferred Member") unless (a) the party to this Agreement that desires to effect such Transfer (the "Transferor") shall not be in default under any provision of this Agreement or the Guaranty executed and delivered by the Transferor pursuant to Article II, or the default (if any) is waived in writing by the other party (the "Continuing Party"), (b) the Transferred Member shall not be in default under any provision of the Operating Agreement, or the default (if any) is waived in writing by the other Member, (c) subject to Section 6.4, the Transferor shall have first complied in all respects with the provisions of Section 6.2, and the Continuing Party shall not have exercised its rights under Section 6.2, (d) such Transfer relates to a single successor in ownership of and beneficial interest in all of the outstanding capital stock of the Transferred Member, (e)

such successor is not subject to foreign ownership, interest or control within the meaning of regulations promulgated by the Committee on Foreign Investment in the United States, pursuant to Section 721 of the Defense Production Act, 50 App. U.S.C.A. § 2170, and (f) such successor assumes and agrees, by instruments in form and substance satisfactory to the Continuing Party, to carry out all obligations of the Transferor under this Agreement and the Guaranty executed and delivered by the Transferor pursuant to Article II and to be bound unequivocally by all the terms and provisions of this Agreement and such Guaranty.

Section 6.2 Right of Purchase.

(a) Perfection of Right. Except as provided in Section 6.4, if a Transferor desires to effect any Transfer under Section 6.1, such Transferor shall first offer the capital stock of the Transferred Member to the Continuing Party on the same terms and conditions as the proposed Transfer, except that such offer shall meet the requirements of this Section 6.2. The offer described in this Section 6.2(a) shall be effected by notice in writing to the Continuing Party and shall specify the consideration and all other terms and conditions of the proposed Transfer and the identity of the Person to whom the Transfer is proposed to be made (the "Transferee"). The Continuing Party shall then have the right, exercisable for a period of thirty (30) days

thereafter (or in the event of any required determination under Section 6.2(b), thirty (30) days after such required determination) to accept such offer. An offer under this Section 6.2(a) may be accepted only in writing, and the failure to affirmatively accept such an offer on a timely basis shall be deemed a refusal to accept the offer.

(b) Determination of Consideration. In the event that a proposed Transfer involves (i) any consideration other than the payment of money and/or the assumption of the obligations of the Transferor, or (ii) the disposition of any property or rights of the Transferor in addition to the Transferor's capital stock of the Transferred Member, the Continuing Party shall be offered the right to acquire the Transferor's capital stock of the Transferred Member for cash in the amount of the fair market value of such capital stock of the Transferred Member as determined by agreement with the Transferor or, if Rockwell and LMC are unable to agree to such fair market value within thirty (30) days of the offer to the Continuing Party, by appraisal pursuant to Section 6.3.

(c) Time Periods. If the Continuing Party shall accept an offer under Section 6.2(a) to acquire such capital stock of the Transferred Member, such Continuing Party shall complete the acquisition within sixty (60) days after such acceptance. If the Continuing Party shall fail to accept

such an offer within the 30-day period referred to in Section 6.2(a), or shall accept such an offer but fail to complete such acquisition within sixty (60) days after such acceptance, the Transferor may, during a period of ninety (90) days following the expiration of such 30- or 60-day period, dispose of its capital stock of the Transferred Member but only to the Transferee and only on the terms and conditions offered to the Continuing Party in accordance with this Section 6.2. If the Transfer is not effected within such 90-day period, the provisions of this Section 6.2 shall again be applicable to any subsequent proposed Transfer. Upon any acquisition, directly or indirectly, of a Transferor's capital stock of a Transferred Member by any Person other than the Continuing Party, the terms of this Section 6.2 shall thereafter apply to any subsequent proposed Transfer by such Person.

(d) Indemnification. If the Continuing Party elects to purchase the Transferor's capital stock of a Transferred Member pursuant to any provision of this Agreement, the Continuing Party shall, in a writing satisfactory to the Transferor, assume and agree to pay, and shall indemnify the Transferor against and hold it harmless from, all liabilities and obligations of the Transferred Member arising from events, acts or omissions occurring on and after the effective date of such purchase.

Section 6.3 Appraisal and Valuation. In the event that Rockwell or LMC, as the case may be, is entitled to purchase the capital stock of LMSAC or RSAC, as the case may be, pursuant to this Article VI and Rockwell and LMC cannot agree on the fair market value of the capital stock of such Transferred Member, the fair market value of such capital stock shall equal the fair market value of the Transferred Member's entire Company Interest (as defined in the Operating Agreement) and such Company Interest shall be valued as follows:

(a) Within sixty (60) days after Rockwell or LMC, as the case may be, gives written notice of a proposed Transfer, each of Rockwell and LMC shall select an appraiser and within 15 days after the date the latter of such two appraisers has been selected and has agreed to serve, the two appraisers shall select a third appraiser, provided that (i) if either Rockwell or LMC does not select an appraiser who agrees to serve as such within the aforementioned 60-day period, then the determination of value by the appraiser who is selected and agrees to serve within such period shall be final, and (ii) if no third appraiser who is agreeable to serving as such is selected by the first two appraisers within the aforementioned 15-day period, then the third appraiser shall be selected in accordance with the

rules of the American Arbitration Association. All costs and expenses of any such appraisers shall be shared equally by Rockwell and LMC.

(b) The Company shall be appraised as a going concern unless the Prime Contract has been terminated and the Company is not engaged in any material operations, and the value of the Company Interest of the Transferred Member shall be equal to the total value of the Company as so determined multiplied by the Participation Percentage (as defined in the Operating Agreement) represented by such Company Interest.

(c) Once each of such appraisers (if there are more than one) has submitted to Rockwell and LMC its appraisal of the value of the Company Interest of the Transferred Member, the value of such Company Interest shall be determined as follows:

First, only the two appraisals which are closest to each other shall be considered, and the third appraisal shall be disregarded; and

Second, the value of the Company Interest shall be computed by averaging the two remaining appraisals;

provided, however, that if the difference between the lowest and the middle appraisal and the difference

between the middle and the highest appraisal are equal, the value shall be the average of the three appraisals.

(d) If within sixty (60) days after the date when all three appraisers have agreed to serve as such one or more appraisals has not been submitted to Rockwell and LMC, then (i) if two appraisals have been so submitted within such 60-day period, the value of the Company Interest shall be determined by averaging such two appraisals, and (ii) if only one appraisal has been so submitted within such 60-day period, the value of the Company Interest shall be determined solely by reference to such appraisal.

Section 6.4 Transfers to Wholly-Owned Affiliates.

(a) Subject to Section 6.4(b), the provisions of Section 6.2 shall not apply to any Transfer whereby a wholly-owned Affiliate of the Transferor (any such person being hereinafter referred to as a "Permitted Transferee") acquires all of the outstanding capital stock of the Transferred Member, provided that the Transferor shall not be discharged from any of its obligations under this Agreement and shall remain obligated under the Guaranty executed and delivered by the Transferor pursuant to Article II.

(b) Unless Rockwell has transferred all of its beneficial interest in the outstanding capital stock of RSAC

pursuant to Section 6.1 (other than to a Permitted Transferee), then, for so long as RSAC shall be a Member, Rockwell agrees that it shall not take, and shall not permit any Permitted Transferee to take, any action that would result in RSAC not being wholly owned, directly or indirectly, by Rockwell. Unless LMC has transferred all of its beneficial interest in the outstanding capital stock of LMSAC pursuant to Section 6.1 (other than to a Permitted Transferee), then, for so long as LMSAC shall be a Member, LMC agrees that it shall not take, and shall not permit any Permitted Transferee to take, any action that would result in LMSAC not being wholly owned, directly or indirectly, by LMC.

Section 6.5 Obligations of a Transferor.

(a) Generally. At the effective time of a disposition by a Transferor of all the outstanding capital stock of a Transferred Member pursuant to Section 6.1 (other than to a Permitted Transferee) the Guaranty executed and delivered by such Transferor pursuant to Article II shall terminate, provided that the Transferor shall not be relieved of any of its liabilities and obligations, including those to the Continuing Party and to RSAC or LMSAC, as the case may be, which arose or accrued from events, acts or omissions occurring prior to the effective time of such disposition.

(b) Survival. The rights and obligations of Rockwell and LMC under this Section 6.5 shall survive any termination of this Agreement.

Section 6.6 Effect of Unauthorized Transfer.

No transfer or other disposition of the capital stock of a Member in violation of any provision of this Agreement shall be effective to pass any title to, or create any interest in favor of, any Person (as defined in the Operating Agreement), but the party which attempted to so effect such transfer or other disposition shall be deemed to have committed a material breach of its obligations to the other party hereunder.

Section 6.7 Encumbrances. Rockwell shall not at any time mortgage, pledge, charge or encumber, or create or suffer to exist a mortgage, pledge, lien, charge, encumbrance or security interest ("Lien"), with respect to any or all of the capital stock of RSAC, or with respect to any Company Interest held by RSAC, and LMC shall not at any time mortgage, pledge, charge or encumber, or create or suffer to exist a Lien, with respect to any or all of the capital stock of LMSAC, or with respect to any Company Interest held by LMSAC. If a Lien shall attach to the capital stock of RSAC, or to the Company Interest held by RSAC, Rockwell agrees to cause such Lien to be discharged promptly at its own expense, and if a Lien attaches to the

capital stock of LMSAC, or to the Company Interest held by LMSAC, LMC agrees to cause such Lien to be discharged promptly at its own expense.

Section 6.8 Limited Activities of RSAC and LMSAC.

Each of Rockwell and LMC shall at all times cause RSAC and LMSAC, respectively, (i) to have as its sole purpose being a Member of the Company in accordance with the Operating Agreement and (ii) to engage in no activities other than those necessary to, or in connection with or incidental to, the accomplishment of such purpose. Each of Rockwell and LMC shall indemnify, defend and hold harmless the other and its Affiliates from and against any and all claims, demands, actions, suits, damages, liabilities, losses, costs and expenses (including reasonable attorneys' fees), to the extent caused by, resulting from or arising out of or in connection with a breach by Rockwell or LMC, as the case may be, of this Section 6.8.

Section 6.9 Continuing Support. Rockwell and LMC each agrees that in the event it sells, transfers, conveys or otherwise disposes of any assets or properties (including capital stock or other equity interests of subsidiaries or other entities) used by it or its Affiliates in support of the Human Space Flight Operations Program that is material to the Company's operations or to the Human Space Flight Operations Program, including without limitation the supply of hardware, software or

services generally to the Company or NASA, and such sale, transfer, conveyance or other disposition does not include the transferor's entire ownership interest in the Company, it shall use commercially reasonable efforts to cause the purchaser or other transferee of such assets or properties to agree to continue such support commensurate with the level of support provided to the Company or NASA prior to such sale, transfer, conveyance or other disposition, it being understood that no assurance can be provided that the purchaser or other transferee will provide such an agreement or that any such support if so provided will be on the same terms and conditions as such support was theretofore provided by the transferor.

ARTICLE VII

TERM AND TERMINATION

Section 7.1 Term. This Agreement shall become effective on the date hereof and continue thereafter for as long as the Operating Agreement is in full force and effect unless sooner terminated in accordance with Section 7.2.

Section 7.2 Termination. Either party shall have the right to terminate this Agreement upon the occurrence of any of the following events:

- (a) the written election of a party that is not in material breach under any of the provisions of this

Agreement or the Guaranty executed and delivered by such party pursuant to Article II, if there is a material breach by the other party of its obligations hereunder or under the Guaranty executed and delivered by such other party pursuant to Article II, or there is a material breach by the other party of its representations and warranties hereunder, and such breach shall not have been cured by the breaching party within twenty (20) business days after notice of such breach has been given by the non-breaching party;

(b) the written election of the party not subject to the same, upon (i) the admission in writing by a party of its inability to pay its debts as they become due; (ii) the institution by a party of proceedings for relief as a debtor under United States law, as now constituted or hereafter in effect, including, without limitation, Title 11 of the United States Bankruptcy Code, or under any state or other law for the relief of debtors; (iii) the institution against a party of any proceeding seeking to adjudicate it bankrupt or insolvent, or seeking liquidation or reorganization under any bankruptcy, insolvency or similar laws for the relief of debtors, or seeking the appointment of a receiver or equivalent official for any substantial part of its assets, and such proceeding shall not have been dismissed or withdrawn within sixty (60) days from the date of the institution thereof; (iv) the making by a party of an

assignment for the benefit of creditors; or (v) the appointment of a receiver or trustee for the business or properties of a party; or

(c) the expiration or other termination of the Operating Agreement.

ARTICLE VIII

MISCELLANEOUS

Section 8.1 Exchange of Information. Neither party nor any of its Affiliates shall prior to the Initial Closing Date produce to or exchange with the other party any competitively sensitive information unless each party's General Counsel or his designee has reached the independent determination, made in good faith, that the production or exchange of such information will not violate the Antitrust Laws. For these purposes, the term "competitively sensitive information" shall mean: (i) information concerning allowable and unallowable costs, including rates for services and price quotes or bids provided to any government agency or other customer, (ii) trade secrets or confidential practices, methods or processes, or (iii) any business plans, strategic plans or competitive strategies.

Section 8.2 Waivers. The failure at any time of either party to require performance by the other party of any responsibility or obligation required by this Agreement

shall in no way affect that party's right to require such performance at any time thereafter, nor shall the waiver by a party of a breach of any provision of this Agreement by the other party constitute a waiver of any other breach of the same or any other provision nor constitute a waiver of the responsibility or obligation itself.

Section 8.3 Amendment. This Agreement may be amended only by an instrument in writing duly executed by the parties hereto.

Section 8.4 Assignability. This Agreement shall be binding upon and inure to the benefit of the successors and permitted assigns of each party hereto. Except as otherwise provided in Article VI of this Agreement, neither this Agreement nor any right or obligation hereunder may be assigned or delegated in whole or in part to any other person without the prior written consent of the other party, and any assignment or attempted assignment in violation of this Agreement shall be null and void.

Section 8.5 Notices. In any case where any notice or other communication is required or permitted to be given hereunder (including, without limitation, any change in the information set forth in this Section 8.5), such notice or communication shall be in writing and (i) personally delivered, (ii) sent by postage prepaid certified or registered mail, return receipt requested,

(iii) sent by recognized overnight courier, or
 (iv) transmitted by telecopier, with a copy sent by postage prepaid certified or registered mail, return receipt requested, as follows:

If to Rockwell, to:

Rockwell International Corporation
 2201 Seal Beach Boulevard
 Seal Beach, California 90740-8250

Telecopier: (310) 797-5687

Attention: William J. Calise, Jr., Esq.
 Senior Vice President, General
 Counsel and Secretary

If to LMC, to:

Lockheed Martin Corporation
 6801 Rockledge Drive
 Bethesda, Maryland 20817

Telecopier: (301) 897-6791

Attention: Frank H. Menaker, Jr., Esq.
 Vice President and
 General Counsel

or in any case to such other address or addresses as hereafter shall be furnished as provided in this Section 8.5 by either party to the other party. All such notices or other communications shall be deemed to have been given or received (i) on the day given, if personally delivered, (ii) on the date of the return receipt if by postage prepaid registered or certified mail, (iii) on the day following

sending, if by recognized overnight courier, and (iv) when sent with confirmed answerback, if by telecopier.

Section 8.6 Third Party Rights. Nothing in this Agreement, whether express or implied, is intended or shall be construed to confer, directly or indirectly, upon or give to any person other than the parties hereto and the Members, any legal or equitable right, remedy or claim under or in respect of this Agreement or any covenant, condition or other provision contained herein.

Section 8.7 Choice of Law. This Agreement shall be construed and enforced in accordance with and governed by the internal laws of the State of Delaware, without giving effect to the conflict of laws principles of such State.

Section 8.8 Consent to Jurisdiction. The parties hereto each irrevocably submits to the exclusive jurisdiction of (i) the Courts of the State of Delaware and (ii) the United States District Court for the District of Delaware, for the purposes of any suit, action or other proceeding (including appeals to their respective appellate courts) arising out of this Agreement or any transaction contemplated hereby (and agrees not to commence any action, suit or proceeding relating hereto except in such courts). The parties hereto each irrevocably and unconditionally waives any objection to the laying of venue of any action, suit or proceeding arising out of this Agreement or the

transactions contemplated hereby in (i) the Courts of the State of Delaware or (ii) the United States District Court for the District of Delaware, and hereby further irrevocably and unconditionally waives and agrees not to plead or claim in any such court that any such action, suit or proceeding brought in any such court has been brought in an inconvenient forum.

Section 8.9 Headings. The headings of the Articles and Sections in this Agreement are provided for convenience of reference only and shall not be deemed to constitute a part hereof.

Section 8.10 Entire Agreement. This Agreement, together with the Schedules and Exhibits hereto, constitutes the entire agreement of the parties with respect to the subject matter hereof and supersedes all prior agreements and understandings, oral and written, between the parties with respect to the subject matter hereof.

Section 8.11 Severability. Should any provision of this Agreement be deemed in contradiction with the laws of any jurisdiction in which it is to be performed or unenforceable for any reason, such provision shall be deemed null and void, but this Agreement shall remain in force in all other respects. Should any provision of this Agreement be or become ineffective because of changes in applicable laws or interpretations thereof or should this Agreement

fail to include a provision that is required as a matter of law, the validity of the other provisions of this Agreement shall not be affected thereby. If such circumstances arise, the parties hereto shall negotiate in good faith appropriate modifications to this Agreement to reflect those changes that are required by law.

Section 8.12 Counterparts. This Agreement may be executed in several counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

Section 8.13 Pronouns and Plurals. All pronouns and variations thereof in this Agreement shall be deemed to refer to the masculine, feminine, neuter, singular or plural, as the identity of any person or persons referred to may require.

Section 8.14 References to Agreement. Numbered or lettered Articles, Sections and subsections herein contained refer to Articles, Sections and subsections of this Agreement unless otherwise expressly stated. Any reference herein to this Agreement shall be deemed to be a reference to such Agreement as the same may be modified, varied, amended or supplemented from time to time by the parties hereto in accordance with the provisions hereof. Unless the context otherwise expressly requires, the words "herein", "hereof" and "hereunder" and other words of

similar importance refer to this Agreement as a whole and not to any particular Article, Section or other subdivision.

Section 8.15 No Partnership. Nothing contained in this Agreement shall be construed to constitute either party as an agent or representative of the other party or to create a partnership between Rockwell or RSAC, on the one hand, and LMC or LMSAC, on the other. No expenditure, commitment or other obligation shall be made or incurred by either party on behalf of the other party (other than as expressly provided in this Agreement or the Operating Agreement) without the express written consent of the other party.

Section 8.16 Consequential Damages. Neither party shall be liable to the other party (or its Affiliates) for special, indirect, punitive or consequential damages resulting or arising out of this Agreement, including loss of profit.

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed and delivered by their respective officers thereunto duly authorized as of the day and year first above written.

ROCKWELL INTERNATIONAL CORPORATION

By: /s/ William J. Calise, Jr.
Name: William J. Calise, Jr.
Title: Senior Vice President,
General Counsel and
Secretary

LOCKHEED MARTIN CORPORATION

By: /s/ Peter B. Teets
Name: Peter B. Teets
Title: President & Chief
Operating Officer
Information &
Technology Services
Sector

Schedule 3.1(c)

Rockwell Consents and Approvals

None

Schedule 3.2(c)

LMC Consents and Approvals

None

[CONFORMED COPY]

LIMITED LIABILITY COMPANY OPERATING AGREEMENT

OF

UNITED SPACE ALLIANCE, LLC

Dated as of November 22, 1995

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LIMITED LIABILITY COMPANY OPERATING AGREEMENT

THIS LIMITED LIABILITY COMPANY OPERATING AGREEMENT (this "Agreement") of United Space Alliance, LLC, a Delaware limited liability company (the "Company"), dated as of November 22, 1995, by and between Rockwell Space Alliance Company, a Delaware corporation ("RSAC") and an indirect wholly-owned subsidiary of Rockwell International Corporation, a Delaware corporation ("Rockwell"), and Lockheed Martin Space Alliance Company, a Delaware corporation ("LMSAC") and an indirect wholly-owned subsidiary of Lockheed Martin Corporation, a Maryland corporation ("LMC").

W I T N E S S E T H :

WHEREAS, the National Aeronautics and Space Administration ("NASA") has determined to consolidate essentially all contracts relating to NASA's Human Space Flight Operations Program under one Space Flight Operations Contract with NASA (such contract, together with any replacements thereof, substitutions therefor and successors thereto, the "Prime Contract") in order to achieve greater efficiency, cost reductions and flight safety;

WHEREAS, Rockwell and LMC are parties to significant prime contracts with NASA in connection with

ARTICLE I

DEFINITIONS

"Act" shall mean the Delaware Limited Liability Company Act (6 Del. Code §§ 18-101, et seq.), as amended from time to time.

"Adjusted Property" shall mean property the Carrying Value of which has been adjusted pursuant to Section 6.2.

"Advisors" shall have the meaning set forth in Section 4.4(b).

"Advisory Board" shall have the meaning set forth in Section 4.4(a).

"Affiliate", when used with reference to a specified Person, shall mean a Person that directly, or indirectly through one or more intermediaries, controls or is controlled by, or is under common control with, the specified Person. For purposes of this definition, "control" shall mean the direct or indirect actual or beneficial ownership of more than 50 percent of issued and outstanding voting securities or other ownership interests.

"Auditors" shall have the meaning set forth in Section 5.6.

"Capital Account" shall mean, with respect to each Member, the capital account maintained for such Member in accordance with the provisions of Section 6.2.

"Carrying Value" shall mean (a) with respect to Contributed Property, the fair market value of such property at the time of its contribution to the Company reduced (but not below zero) by all amortization, depreciation and cost recovery deductions charged to the Members' Capital Accounts pursuant to Article VI with respect to such property, and (b) with respect to any other property, the adjusted basis of such property for United States Federal income tax purposes, as of the time of determination, subject to those adjustments specified in the following sentences. The Carrying Value of any property shall be adjusted from time to time in accordance with Sections 6.2(c), 6.2(d) and 6.2(e) and to reflect changes, additions or other adjustments to the Carrying Value for dispositions, acquisitions or improvements of Company property, as deemed appropriate by the Company and in a manner consistent with United States Federal income tax principles. The Carrying Values of Company assets shall be increased (or decreased) to reflect any adjustments to the adjusted basis of such assets pursuant to Code Section 734(b) or Code Section 743(b), but only to the extent that such adjustments are taken into account in determining Capital Accounts pursuant

"CFO" shall have the meaning set forth in Section 4.1(d).

"Code" shall mean the Internal Revenue Code of 1986, as amended from time to time.

"Company" shall have the meaning set forth in the Preamble.

"Company Assets" shall mean any assets acquired by the Company pursuant to this Agreement, contributed by the Members pursuant to Article III or otherwise acquired by the Company.

"Company Interest" shall mean a Member's entire interest in the Company, including its rights and obligations as set forth in this Agreement.

"competitively sensitive information" shall have the meaning set forth in Section 7.3(f).

"Comptroller" shall have the meaning set forth in Section 4.1(e).

"Continuing Member" shall have the meaning set forth in Section 8.1.

"Contract" shall have the meaning set forth in Section 4.3(a).

"Contributed Property" shall mean any property contributed to the Company other than cash.

"Contributing Member" shall have the meaning set forth in Section 3.5.

"COO" shall have the meaning set forth in Section 4.1(c).

"Damages" shall have the meaning set forth in Section 12.2.

"Fiscal Year" shall have the meaning set forth in Section 5.1.

"Human Space Flight Operations Program" shall mean all phases and services to be performed as determined by NASA under the Prime Contract or other contracts awarded to the Company, including the Johnson Space Center space mission operations, the Kennedy Space Center orbiter vehicular launch, landing, retrieval and ground processing operations, and a space flight operations contract program office, and such other elements as NASA may from time to time add to the Prime Contract or other contracts awarded to the Company.

"Indemnifying Member" shall have the meaning set forth in Section 12.2.

"Indemnified Party" shall have the meaning set forth in Section 12.4(d).

"Independent Advisors" shall have the meaning set forth in Section 4.4(b).

"Initial Closing Date" shall have the meaning set forth in Section 3.2.

"Lien" shall have the meaning set forth in Section 8.5.

"LMC" shall have the meaning set forth in the Preamble.

"LMSAC" shall have the meaning set forth in the Preamble.

"LMSAC Assets" shall have the meaning set forth in Section 3.3(b).

"LMSAC Designated Advisors" shall have the meaning set forth in Section 4.4(b).

"LMSAC Facility" shall have the meaning set forth in Section 3.3(b).

"LSOC" shall have the meaning set forth in Section 3.1.

"Master Agreement" shall mean the Master Agreement dated as of the date hereof between Rockwell and LMC.

"Member" shall mean and include each of RSAC and LMSAC when acting in its capacity as a member of the Company and any Person admitted as an additional or substitute member of the Company pursuant to this Agreement.

"NASA" shall have the meaning set forth in the Recitals.

"Net Income" and "Net Loss" shall mean an amount equal to the Company's taxable income or taxable loss for a relevant period, adjusted as provided herein. Net Income

and Net Loss shall be determined in accordance with Section 703(a) of the Code (for this purpose, all items of income, gain, loss or deduction required to be stated separately pursuant to Section 703(a)(1) of the Code shall be included in taxable income or loss), and adjusted as provided in Sections 6.2(b) through (e), and further adjusted to reflect any adjustments resulting from amended returns, claims for refund and tax audits.

"Net Value" shall mean, in the case of a contribution of assets, the fair market value of assets contributed to the Company reduced by the outstanding balance of any liabilities either assumed by the Company upon such contribution or to which such assets are subject when contributed and, in the case of a distribution of assets, the fair market value of assets distributed by the Company reduced by the outstanding balance of any Company liabilities assumed by the Member receiving such distribution to which such distributed property is subject, as such fair market value is determined by the Members pursuant to Section 4.3. In determining the amount of any liability for purposes of this definition, there shall be taken into account Code Section 752(c) and any other applicable provisions of the Code and Treasury Regulations.

"Non-Contributing Member" shall have the meaning set forth in Section 3.5.

"Notice Partner" shall have the meaning set forth in Section 5.5(b).

"Officers" shall mean the individuals appointed pursuant to Section 4.1.

"Other Indemnified Persons" shall have the meaning set forth in Section 12.2.

"Participation Percentage" shall mean for each Member fifty percent (50%), subject to the other provisions of this Agreement.

"Permitted Investment" shall have the meaning set forth in Section 5.8.

"Person" shall mean any individual, firm, trust, partnership, joint venture, association, corporation, unincorporated organization, government or department or agency thereof, or other entity.

"Prime Contract" shall have the meaning set forth in the Recitals.

"Prime Rate" shall have the meaning set forth in Section 9.2.

"Recapture Income" shall mean any gain recognized by the Company (but computed without regard to any adjustment required by Section 734 or 743 of the Code) upon the disposition of any property or asset of the Company that does not constitute capital gain for United States Federal income tax purposes because such gain represents the

"Treasury Regulations" or "Treas. Regs." shall mean the Income Tax Regulations, including Temporary Regulations, promulgated under the Code, as such regulations may be amended from time to time (including corresponding provisions of succeeding regulations).

"Unrealized Gain" shall mean as of any date of determination the excess, if any, of the fair market value of property (as determined under Section 6.2(d) or (e) as of such date of determination) over the Carrying Value of such property as of such date of determination (prior to any adjustment to be made pursuant to Section 6.2(d) or (e) as of such date).

"Unrealized Loss" shall mean as of any date of determination the excess, if any, of the Carrying Value of property as of such date of determination (prior to any adjustment to be made pursuant to Section 6.2(d) or (e) as of such date) over the fair market value of such property (as determined under Section 6.2(d) or (e) as of such date of determination).

"Withdrawing Member" shall have the meaning set forth in Section 8.1.

ARTICLE II

ORGANIZATIONAL MATTERS

Section 2.1 Formation and Purpose. The Company was formed on November 7, 1995 by the filing of the Certificate with the Secretary of State of the State of Delaware in accordance with the Act. Upon satisfaction of the conditions contained in Article IV of the Master Agreement and as of the Initial Closing Date, RSAC and LMSAC shall be deemed admitted as Members of the Company. The purpose of the Company shall be to perform all phases of the Human Space Flight Operations Program. The Company may engage in any kind of activity and perform and carry out contracts of any kind necessary to, or in connection with or convenient or incidental to, the accomplishment of such purpose, so long as such activities and contracts may be lawfully carried on or performed by a limited liability company under the laws of the State of Delaware and the laws of the United States. The Company shall have no other purpose and shall engage in no business or activities in furtherance of any other purpose.

Section 2.2 Name. The name of the Company shall be "United Space Alliance, LLC". All business of the Company shall be conducted under the name of the Company and

title to all property, real, personal or mixed, owned by or leased to the Company shall be held in such name.

Section 2.3 Principal Office and Place of Business. The principal office and place of business of the Company shall be located in Houston, Texas in the immediate vicinity of the Johnson Space Center, or at such other place or places as the Members may from time to time designate by mutual agreement.

Section 2.4 Term. The term of the Company commenced on the date the Certificate was filed with the Secretary of State of the State of Delaware in accordance with the Act and shall continue until the Company is dissolved as provided in Article X.

Section 2.5 Registered Office and Agent. The address of the registered office of the Company and the name and address of the registered agent for service of process on the Company is RL&F Service Corp., One Rodney Square, 10th Floor, Tenth and King Streets, Wilmington, New Castle County, Delaware 19801. At any time and from time to time the Company may designate another registered office or agent.

Section 2.6 Qualification in Other Jurisdictions. The Company shall be qualified or registered under foreign qualification or assumed or fictitious name statutes or similar laws in any jurisdiction in which the Company

transacts business and in which such qualification or registration is determined by the Company to be necessary or advisable.

ARTICLE III

CAPITAL CONTRIBUTIONS

Section 3.1 Capital Contributions Generally. The Members shall contribute to the capital of the Company the cash specified in this Article III at the times so specified or as designated by the CEO pursuant to Section 3.4 or by the Members pursuant to Section 4.3. In addition, each of RSAC and LMSAC shall from time to time after the date hereof and on such dates (each such date a "Subsequent Closing Date") as RSAC and LMSAC shall mutually agree, contribute to the capital of the Company such other assets and property, and such contracts, bids, purchase orders, leases, subleases, easements, licenses and other agreements, as shall be mutually agreed upon by RSAC and LMSAC, it being currently contemplated that the Company shall have, in its initial phase, approximately \$600 million in contract revenues (based on 1995 fiscal year revenues) to come in approximately equal portions from contract effort currently performed by Rockwell Space Operations Company, a Delaware corporation ("RSOC") and a direct wholly-owned subsidiary of Rockwell, and by Lockheed Space Operations Company, a Nevada

corporation ("LSOC") and an indirect wholly-owned subsidiary of LMC, together with the facility and other resources used to perform the contracts associated with those revenues, and approximately 6,000 employees to come principally from RSOC and LSOC. All capital contributions shall be credited to the Capital Accounts of the Members.

Section 3.2 Initial Capital Contributions.

Subject to the terms and conditions of this Agreement and the Master Agreement, on such date after satisfaction of the conditions set forth in Article IV of the Master Agreement or on such other date as the Members shall mutually agree (the "Initial Closing Date"), each of RSAC and LMSAC shall contribute to the capital of the Company the amount of \$1,000,000 in cash (for a total of \$2,000,000) by wire transfer of immediately available funds to a bank account of the Company designated by the Company.

Section 3.3 Subsequent Capital Contributions.

(a) Subject to the terms and conditions of this Agreement and the Master Agreement, on each Subsequent Closing Date RSAC shall transfer and assign to the Company (i) good and marketable title to such assets as shall be mutually agreed upon by the Members prior to such Subsequent Closing Date and described in a mutually agreed upon schedule to be attached to and to form a part of this Agreement (a "Subsequent Closing Date Schedule"), (ii) subject to Section

3.6, all of RSAC's right, title and interest in and to such contracts, bids, purchase orders and agreements as shall be mutually agreed upon by the Members and set forth in such Subsequent Closing Date Schedule, and (iii) subject to Section 3.6, all of RSAC's right, title and interest in and to such leases, subleases, easements, licenses and other agreements as shall be mutually agreed upon by the Members and described in such Subsequent Closing Date Schedule relating to the occupancy or use of any facility described in such Subsequent Closing Date Schedule (an "RSAC Facility"). RSAC shall effect such transfers and assignments by delivery to the Company of such deeds, bills of sale, endorsements, assignments, consents or other instruments as shall be reasonably requested by LMSAC or the Company. The assets transferred by RSAC to the Company pursuant to this Section 3.3(a) are sometimes herein referred to as the "RSAC Assets".

(b) Subject to the terms and conditions of this Agreement and the Master Agreement, on each Subsequent Closing Date LMSAC shall transfer and assign to the Company (i) good and marketable title to such assets as shall be mutually agreed upon by the Members and described in the relevant Subsequent Closing Date Schedule, (ii) subject to Section 3.6, all of LMSAC's right, title and interest in and to such contracts, bids, purchase orders and agreements as

shall be mutually agreed upon by the Members and described in such Subsequent Closing Date Schedule, and (iii) subject to Section 3.6, all of LMSAC's right, title and interest in and to such leases, subleases, easements, licenses and other agreements as shall be mutually agreed upon by the Members and described in such Subsequent Closing Date Schedule relating to the occupancy or use of any facility described in such Subsequent Closing Date Schedule (an "LMSAC Facility"). LMSAC shall effect such transfers and assignments by delivery to the Company of such deeds, bills of sale, endorsements, assignments, consents or other instruments as shall be reasonably requested by RSAC or the Company. The assets transferred by LMSAC to the Company pursuant to this Section 3.3(b) are sometimes referred to herein as the "LMSAC Assets".

(c) Unless otherwise agreed by the Members, the RSAC Assets and the LMSAC Assets to be contributed to the capital of the Company by RSAC and LMSAC, respectively, on each Subsequent Closing Date (i) shall be of equal value (such values to be set forth in the relevant Subsequent Closing Date Schedule) and (ii) shall, to the extent legally permissible, be transferred, assigned and contributed to the Company simultaneously on such Subsequent Closing Date.

Section 3.4 Additional Cash Capital

Contributions.

(a) Each Member shall make additional cash contributions to the capital of the Company in the amounts and on the dates to be set forth in a Schedule ("Schedule 3.4(a)") to be mutually agreed upon by the Members and to be attached to and form a part of this Agreement.

(b) In addition to the capital contributions provided for in Sections 3.2, 3.3 and 3.4(a), the Members hereby undertake to make such further cash contributions to the capital of the Company as may be requested by the CEO (after consultation, to the extent reasonably feasible, with the COO and after the CEO has advised the Members in writing that in his business judgment further cash contributions in the amount specified are reasonably required by the Company) at any time and from time to time after the date of this Agreement upon not less than ten (10) days prior notice to the Members, provided that contributions made pursuant to this Section 3.4(b) shall be made by the Members in proportion to their Participation Percentages and shall in no event exceed \$25,000,000 in the aggregate in any Fiscal Year. Any capital contributions in excess of the amounts set forth in the preceding sentence and in Sections 3.2, 3.3 and 3.4(a) shall be made in such amounts and at such times as shall be determined by mutual agreement of the Members.

Section 3.5 Default in Cash Contribution

Obligation. If any Member (a "Non-Contributing Member") fails to fulfill a Cash Contribution Obligation and such failure continues for twenty (20) business days after such Member and Rockwell (in the case of a failure by RSAC) or LMC (in the case of a failure by LMSAC) receive notice from the Company or the other Member (the "Contributing Member") of such failure, then the Contributing Member may, in addition to any other remedies available under this Agreement or at law or in equity, elect to contribute some or all of the non-contributed amount in cash to the Company. In the event of any such contribution of additional capital by the Contributing Member, the Participation Percentages of the Members shall be appropriately adjusted to reflect the relative capital contributions of the Members under Article III.

Section 3.6 Consents of Third Parties. RSAC

shall use reasonable efforts to obtain any required consents to the assignment to the Company of any contract, bid, purchase order or other agreement to be contributed by RSAC to the Company on any Subsequent Closing Date, and LMSAC shall use reasonable efforts to obtain any required consents to the assignment to the Company of any contract, bid, purchase order or other agreement to be contributed by LMSAC to the Company on any Subsequent Closing Date. This

Agreement shall not constitute an agreement to assign any interest in any such contract, bid, purchase order or other agreement or any claim, right or benefit arising thereunder or resulting therefrom, if an assignment without the consent of a third party would constitute a breach or violation thereof or adversely affect the rights of the Company, RSAC or LMSAC, as the case may be, thereunder. If a consent of a third party which is required in order to assign any such contract, bid, purchase order or other agreement or any claim, right or benefit arising thereunder or resulting therefrom is not obtained prior to the relevant Subsequent Closing Date, or if an attempted assignment thereof would be ineffective or would adversely affect the rights of the Company, RSAC or LMSAC, as the case may be, thereunder, RSAC and LMSAC will cooperate with the Company in effecting any lawful and economically feasible arrangement, including subcontracting arrangements or subleasing of appropriate employees and equipment, to provide that the Company shall receive each of RSAC's and LMSAC's, as the case may be, interest in the benefits, and shall perform each of their respective obligations, under any such contract, bid, purchase order or other agreement; and any transfer or assignment to the Company by RSAC or LMSAC of any interest under any such contract, bid, purchase order or other agreement that requires the consent

of a third party shall be made subject to such consent or approval being obtained. If one or more government contracts is to be contributed by a Member or a Member's Affiliate on behalf of a Member as of a Subsequent Closing Date, as soon as practicable following such Subsequent Closing Date, such Member shall, in accordance with Federal Acquisition Regulations Part 42, ¶ 42.12, submit in writing to each responsible Contracting Officer (as determined pursuant to Federal Acquisition Regulations Part 42, ¶ 42.1202(a)) a request for the United States Government (i) to recognize the Company as the successor in interest of RSAC or LMSAC or an Affiliate of either, as the case may be, under each of the government contracts included on the relevant Subsequent Closing Date Schedule, (ii) to enter into one or more novation agreements with the Company and RSAC or LMSAC or an Affiliate of either, as applicable, for the transfer and assignment of such government contracts, and (iii) to recognize the Company as the successor in interest of RSAC or LMSAC or an Affiliate of either, as the case may be, to each bid, offer or proposal to the United States Government included on the relevant Subsequent Closing Date Schedule.

ARTICLE IV

MANAGEMENT; ADVISORY BOARDSection 4.1 Officers.

(a) The Officers. The Officers of the Company shall consist of a President and Chief Executive Officer, an Executive Vice President and Chief Operating Officer, a Chief Financial Officer, a Comptroller and such other Officers as shall be appointed from time to time by the President and Chief Executive Officer.

(b) President and Chief Executive Officer. The President and Chief Executive Officer of the Company (the "CEO") shall be appointed by RSAC and may come from any industry or background on a "best candidate" basis. Prior to any such appointment RSAC shall notify LMSAC of the identity of its proposed appointee and LMSAC shall have the right to veto such appointment by written notice to RSAC within twenty (20) days after being so notified. In the event that LMSAC exercises the foregoing veto right as to more than two proposed appointees for any vacancy, RSAC may elect to have any such veto after the second veto treated as a deadlock between the Members to be resolved in accordance with the provisions of Article XIII. The CEO shall have the authority set forth in Section 4.2. The compensation of the

CEO shall be determined by mutual agreement of the Members. The initial CEO appointed by RSAC shall be Kent M. Black.

(c) Executive Vice President and Chief Operating Officer. The Executive Vice President and Chief Operating Officer of the Company (the "COO") shall be appointed by LMSAC and may come from any industry or background on a "best candidate" basis. Prior to any such appointment LMSAC shall notify RSAC of the identity of its proposed appointee and RSAC shall have the right to veto such appointment by written notice to LMSAC within twenty (20) days after being so notified. In the event that RSAC exercises the foregoing veto right as to more than two proposed appointees for any vacancy, LMSAC may elect to have any such veto after the second veto treated as a deadlock between the Members to be resolved in accordance with the provisions of Article XIII. The COO shall have such powers and perform such duties as may be prescribed from time to time by the CEO. The compensation of the COO shall be determined by mutual agreement of the Members. The initial COO appointed by LMSAC shall be James Adamson.

(d) Chief Financial Officer. The Chief Financial Officer of the Company (the "CFO") shall be appointed by RSAC. The CFO shall, under the direction of the CEO, be responsible for all financial and accounting matters of the

Company. The initial CFO appointed by RSAC shall be Richard Hickman.

(e) Comptroller. The Comptroller of the Company (the "Comptroller") shall be appointed by LMSAC and shall have such powers and perform such duties as may be prescribed from time to time by the CEO. The initial Comptroller appointed by LMSAC shall be James Weston.

(f) Other Officers. Officers of the Company other than those whose duties are expressly provided for in this Agreement shall be appointed, and shall have such authority and perform such duties as may from time to time be prescribed, by the CEO (after consultation, to the extent reasonably feasible, with the COO, and provided that the appointment of the principal legal officer of the Company shall be subject to the approval of both Members), it being understood that the remainder of the Company's management team will, to the extent practicable, initially be comprised of a substantially equal balance of personnel from Rockwell (or its Affiliates) and from LMC (or its Affiliates), with selected outside hires.

(g) Removal. Any Officer appointed by a Member may be removed and replaced at any time and for any reason only by the Member authorized to appoint such Officer, or in the case of the CEO or the COO, pursuant to Section 4.4(a). Any Officer appointed by the CEO may be removed and replaced

at any time and for any reason only by the CEO (after consultation, to the extent reasonably feasible, with the COO).

Section 4.2 Management of the Company by the CEO.

Subject to the rights of Members as set forth herein, overall management, supervision and operation of the Company shall be exercised by the CEO, who, except as otherwise expressly provided in this Agreement, shall have complete, total and exclusive authority, discretion and responsibility in the management, supervision and operation of the business of the Company; provided, however, that the CEO shall, to the extent reasonably feasible, consult with and seek the advice and recommendations of the COO on all matters material to the management or the business of the Company. Without limiting the generality of the foregoing, the CEO shall have the authority and responsibility, subject to the other terms of this Agreement, including, but not limited to, Sections 2.1 and 4.3, to take such action from time to time as he or she may deem necessary, appropriate or advisable in connection with the management and conduct of the business and affairs of the Company including, but not limited to, the following:

- (a) determining all questions of general business policy and management;

(b) managing and supervising the day-to-day operations of the Company;

(c) approving contracts, agreements and commitments of the Company;

(d) approving the choice of the Company's outside business consultants, if any, and approving the retention (from a list of attorneys approved by both Members) or removal of outside attorneys for the Company;

(e) approving real and personal property leases and the acquisition or disposition by the Company of interests in real and personal property;

(f) hiring and dismissing Officers (other than the COO, the CFO and the Comptroller) and other employees of the Company and establishing the terms of employment of Officers (other than himself or herself and the COO) and other employees;

(g) commencing, settling or taking any other action in connection with any litigation to which the Company is or may become a party; and

(h) approving press releases and other public announcements or communications by or on behalf of the Company.

Section 4.3 Approval of Certain Actions by the Members. Notwithstanding any other provision of this

Agreement, the agreement of both Members (which agreement (i) shall be in writing or (ii) as to either Member, may be obtained orally from the duly authorized representative of such Member who will be designated by such Member in writing, or by such authorized representative's designee) shall be required with respect to the following matters:

(a) entering into or terminating (where termination is an option or right of the Company) any of the following contracts, subcontracts, agreements or other arrangements, or any amendment or modification thereto, enforceable against the Company (each such contract, subcontract, agreement, arrangement, amendment or modification referred to individually as a "Contract" and collectively as the "Contracts"):

(i) any Contract between the Company and NASA involving an aggregate amount of contract value or performance obligations in excess of \$250,000,000;

(ii) any fixed price development Contract between the Company and NASA or any other governmental agency or any other Person under which the Company has performance obligations;

(iii) any Contract the payment obligations of which are denominated in any currency other than United States dollars; or

(iv) any Contract between the Company and a Member or an Affiliate of a Member which Contract involves an aggregate amount in excess of \$200,000,000;

(b) any change to the Fiscal Year of the Company;

(c) the sale, transfer, assignment, conveyance or other disposition (including any lease or bailment where the Company is lessor or bailor for a term greater than one (1) year) of any assets or properties of the Company having a fair market value or a book value in excess of \$10,000,000 in any single transaction;

(d) any change or amendment to any indemnification or other insurance agreement or arrangement with NASA or any other governmental agency (U.S. or foreign) that would remove the "first dollar of loss coverage" for any loss, damage or other casualty arising from Company operations, including the ground preparations, launch, flight, landing and transport of the Space Shuttle;

(e) the determination of the amount of Cash Available for Distribution;

(f) the incurrence or guarantee by the Company of indebtedness for borrowed money, or the making or granting of any pledge, mortgage, encumbrance or

security interest in any Company asset or property, or the entry by the Company into any guarantee, assurance or undertaking of the performance of any contract by any third party, any Member or any Affiliate of any Member (it being understood that the Prime Contract or any other contract between the Company and NASA or any other governmental agency will not be deemed to constitute such a guarantee, assurance or undertaking);

(g) requiring additional capital contributions by the Members other than as provided for in Article III;

(h) any acquisition of assets or rights from any other Person for consideration in excess of \$10,000,000 in any single transaction, other than in the ordinary course of business of the Company, or the purchase of any real property, or the lease of any real property for a lease term in excess of five years and requiring the payment of rent by the Company in excess of \$10,000,000;

(i) the entry into by the Company or the establishment by the Company of any joint venture, partnership, limited liability company, subsidiary or other entity with any other Person, including without limitation any Member or any Affiliate of any Member;

(j) the retention of any outside attorneys for the Company not included on a list thereof approved by

the Members, or the change in the independent accountants and auditors for the Company;

(k) exposing the Company to any unfunded potential termination liability in respect of contractual or pre-contractual activity of the Company in an aggregate amount that exceeds by more than \$10,000,000 the estimated amounts of such unfunded potential termination liability set forth in the written business plan and budget submitted to the Members pursuant to Section 5.7 (provided that the Members shall have approved such estimated amounts), or such other amount as may be agreed to in writing by the Members;

(l) the licensing of or grant of rights in any intellectual property belonging to the Company to any Person including without limitation any Member or any Affiliate of any Member, other than in the ordinary course of business of the Company;

(m) any payment or offer of any payment by the Company or any of its agents or representatives to any official of any foreign government;

(n) settling any claim, litigation or dispute for an amount in excess of \$10,000,000;

(o) commencing any litigation in the name or on behalf of the Company against NASA or any other governmental agency;

(p) making any election for Federal income tax purposes;

(q) except as otherwise provided for in this Agreement, making any non-cash distributions or accepting any non-cash capital contributions;

(r) the valuation of any non-cash property contributed to the Company by a Member, or distributed to a Member by the Company; or

(s) making any special allocations pursuant to Section 6.3(b)(iv), or changing the method of maintaining the Company's Capital Accounts, or taking any other action referred to in clauses (i), (iii), (iv) and (v) of Section 6.3(d) or Section 5.5(c).

Section 4.4 The Advisory Board.

(a) Duties. The Company shall have an advisory board (the "Advisory Board") which will review the progress and operations of the Company and advise the Company. The Advisory Board may recommend actions for consideration by the CEO or the Members to assist the Company in achieving its goals of placing appropriate emphasis on safety of flight and cost reduction initiatives. Notwithstanding anything to the contrary provided herein, the Advisory Board

shall have no responsibility or authority to manage the affairs of the Company, provided that the Advisory Board shall have authority to remove the CEO or the COO by a majority vote of the entire Advisory Board and may act if and when called upon to do so pursuant to Article XIII.

(b) Composition. The Advisory Board shall consist of seven (7) advisors (the "Advisors"), two (2) of whom shall be appointed by RSAC ("RSAC Designated Advisors"), two (2) of whom shall be appointed by LMSAC ("LMSAC Designated Advisors"), and three (3) of whom shall be appointed jointly by LMSAC and RSAC and who shall not be employees of either Rockwell or LMC or their respective Affiliates ("Independent Advisors"). Each Member may designate one or two temporary Advisors to the Advisory Board to act as Advisor(s) in the absence of a like number of the Member's designated Advisors. Each Member shall have the power to remove (with or without cause) one or both of its designated Advisors by delivering written notice of such removal to the Company, to the other Member and to the Independent Advisors. The Members may, by written agreement, remove any or all of the Independent Advisors by delivering written notice thereof to the Company and to such Independent Advisors. Each Advisor shall serve until (i) his or her successor is designated by the Member(s) that appointed such Advisor or (ii) his or her earlier

resignation, removal, death or inability to serve. Any Advisor may resign at any time upon written notice to the Company and the Member(s) that appointed such Advisor. Vacancies on the Advisory Board shall be filled by the Member(s) that appointed the Advisor previously holding the position which is then vacant. Appointment of an Advisor shall be effective upon receipt of notice by the Company from the Member(s) taking such action. The initial Advisors are:

- (i) RSAC Designated Advisors:
 John A. McLuckey
 Robert G. Minor
- (ii) LMSAC Designated Advisors:
 Peter B. Teets
 Gerald T. Oppliger
- (iii) Independent Advisors:
 Dr. Lew Allen, Jr.
 Dr. Mark Albrecht
 [to be agreed]

(c) Compensation. All compensation of and expenses incurred by any designated Advisor of either Member in performing such Advisor's duties hereunder shall be the responsibility of the Member that appointed such Advisor, and each Member shall hold the Company and the other Member harmless from any loss, claim or liability resulting from or arising out of such Member's obligations to compensate or reimburse any such Advisor. All compensation of and expenses incurred by any Independent Advisor shall be the responsibility of the Company. Except as otherwise agreed by the Members, the compensation (independent of reimbursable expenses) of each Independent Advisor shall consist of an annual retainer in the amount of \$15,000, payable in equal quarterly installments, plus \$1,000 for each meeting of the Advisory Board attended by such Independent Advisor, payable promptly after each such meeting.

(d) Notice of Advisory Board Meetings; Location; Waiver of Notice. Regular meetings of the Advisory Board shall be held at least monthly until six months after the date of award of the Prime Contract, and thereafter at least quarterly, at such places, dates and times as may be fixed by the CEO or by mutual agreement of the Members upon ten (10) days' prior written notice to each Advisor. Special meetings of the Advisory Board may be called by the CEO or

by any two Advisors upon ten (10) days' prior written notice to each Advisor and the Company, which notice shall identify the purpose of the special meeting or the business to be transacted. Meetings of the Advisory Board may be held by conference telephone or similar communications equipment by means of which all individuals participating in the meeting can be heard simultaneously by all other participants and each can speak to all others. Notice of meeting may be waived before, at or after a meeting by a written waiver of notice signed by the Advisor entitled to notice. An Advisor's attendance at a meeting shall constitute waiver of such notice unless the Advisor states at the beginning of the meeting his objection to the transaction of business because the meeting was not lawfully called or convened.

(e) Chair; Attendance. At the first meeting of the Advisory Board one of the two RSAC Designated Advisors, as selected by RSAC, will serve as chair of the meeting. At subsequent meetings of the Advisory Board, the chair shall be selected alternately by LMSAC or RSAC from its respective Designated Advisors. The CEO and the COO shall be entitled to receive notices of and to attend all meetings of the Advisory Board, provided that they shall remove themselves from any meeting at the request of the Advisory Board.

(f) Quorum; Approvals; Written Action. The presence of four (4) Advisors shall constitute a quorum for

the transaction of business at an Advisory Board meeting, provided that at least one such Advisor is an RSAC Designated Advisor and one such Advisor is an LMSAC Designated Advisor. Except as otherwise provided in this Agreement, when a quorum is present at any meeting of the Advisory Board the vote of a majority of the Advisors present shall be the act of the Advisory Board. Any RSAC Designated Advisor or LMSAC Designated Advisor may appoint in writing another Advisor as his or her proxy to act on his or her behalf and to vote in his or her stead at any meeting of the Advisory Board. The Advisory Board may act without a meeting only if the action taken is approved in advance in writing by the unanimous consent of all Advisors. The Advisory Board shall cause written minutes to be prepared of all action taken by the Advisory Board, which minutes shall be maintained at the Company's principal office. Copies of such minutes shall promptly be provided to each Member and each Advisor.

Section 4.5 Employees and Benefit Matters. RSAC and LMSAC will use all commercially reasonable efforts to examine and determine the needs of the Company in respect of employees and employee benefit matters and to reach a written agreement on such matters at the earliest practicable date, it being understood that final agreement will depend in part upon the terms of the Prime Contract and

discussions and negotiations to be conducted between the Company and NASA. RSAC and LMSAC each will be responsible for any rights of their (or their respective Affiliates') respective employees who become employees of the Company which rights accrued prior to employment by the Company and by virtue of employment with RSAC or LMSAC (or their respective Affiliates), as the case may be, including without limitation any rights accrued under any pension or other benefit plan.

ARTICLE V

FINANCIAL, ACCOUNTING AND

ADMINISTRATIVE MATTERS

Section 5.1 Fiscal Year. The fiscal year of the Company (the "Fiscal Year") shall end on September 30 of each year.

Section 5.2 Financial Statements. (a) As promptly as practicable, but in no event later than fifteen (15) days after the close of each calendar month during each Fiscal Year, the following unaudited financial statements shall be prepared and submitted to each Member:

(i) a balance sheet of the Company as of the end of such month;

(ii) a statement of profit and loss for the Company for such month and the Fiscal Year to date; and

(iii) a statement of cash flows for the Company for such month.

(b) As promptly as practicable, but in no event later than sixty (60) days after the close of each Fiscal Year, the following audited financial statements shall be prepared and submitted to each Member:

(i) a balance sheet of the Company as of the end of such Fiscal Year;

(ii) a statement of profit and loss for the Company for such Fiscal Year;

(iii) a statement of cash flows for the Company for such Fiscal Year; and

(iv) a statement of the Members' Capital Accounts and all changes therein.

(c) All financial statements of the Company referred to in this Section 5.2 shall be prepared in accordance with generally accepted accounting principles.

Section 5.3 Records. The Company shall maintain complete and accurate records and accounts of all Company revenues and expenditures and of the acquisition, ownership and disposition of all properties of the Company. The Members shall have access to the books of account and business records of the Company during normal business hours for inspection and audit by any Member or its duly authorized representative, at the expense of such Member.

No charges shall be made to such Member by the Company for such inspection and audit other than for out-of-pocket costs of the Company occasioned thereby. The Company shall maintain all such records for a period of six (6) years from the date of the making or receipt thereof, except for those records, if any, required to be kept for a longer period under applicable law or which a Member requests be maintained for a longer period.

Section 5.4 Tax Returns. As soon as practicable after the end of each Fiscal Year, the Company shall cause to be prepared and filed, to the extent required, tax returns for the Company and shall supply copies of all United States Federal, state and local income tax returns to the Members for their review thirty (30) days prior to the filing thereof with the appropriate governmental agencies. In preparing and filing such tax returns, the Company shall reasonably consult with the Members. All returns filed by the Company in respect of Federal income taxes shall be filed on the basis that the Company is a partnership for Federal income tax purposes.

Section 5.5 Tax Matters Partner, Etc. (a) RSAC is hereby appointed the "Tax Matters Partner" within the meaning of Section 6231(a)(7) of the Code. RSAC shall act in good faith in fulfilling the responsibilities of a Tax Matters Partner under the Code, the Treasury Regulations and

pursuant to this Agreement, and in fulfilling any similar role under state, local or foreign law.

(b) RSAC shall promptly take such action as may be necessary to cause LMSAC to become a "Notice Partner" within the meaning of Section 6231(a)(8) of the Code. RSAC shall keep LMSAC informed of all material matters that may come to its attention in its capacity as Tax Matters Partner by giving LMSAC notice thereof within fifteen (15) days after it becomes informed of any such matter or within such shorter period as may be required to comply with any appropriate statutory or regulatory provisions. RSAC shall furnish LMSAC copies of all written communications from the Internal Revenue Service within fifteen (15) days after the receipt thereof or within such shorter period as may be required to comply with any appropriate statutory or regulatory provisions. RSAC shall also provide LMSAC with reasonable advance notice of meetings and conferences with the Internal Revenue Service so that LMSAC will have a reasonable opportunity to participate in such meetings and conferences. Without limiting the generality of the foregoing, each Member shall give to the other Member prompt notice of receipt of any written notice that the Internal Revenue Service or any other taxing authority intends to examine any federal, state, local or foreign tax return, or the books and records, of the Company.

(c) RSAC, in its capacity as Tax Matters Partner, shall not take any action contemplated by Section 6222 through Section 6233, inclusive, of the Code without the approval of both Members; provided, however, that nothing contained herein shall be construed to limit the ability of RSAC to take any action under Section 6222 through Section 6233, inclusive, of the Code that is left to the determination of a Member so long as such action is not legally binding on LMSAC or the Company. Without limiting the generality of the foregoing, RSAC shall not, and shall have no power to, enter into any extension of the period of limitations for making assessments on behalf of another Member, or any settlement agreement that binds another Member.

(d) If either Member enters into a written settlement or closing agreement with the Internal Revenue Service with respect to any partnership tax item in respect of the Company, it shall notify the other Member of such agreement and its terms at least ten (10) days prior to the execution of such written agreement.

(e) In the event that RSAC ceases to be a Member, LMSAC shall become the Tax Matters Partner, unless RSAC has transferred its Company Interest to a wholly-owned Affiliate in accordance with the terms hereof, in which case such Affiliate shall become the Tax Matters Partner.

(f) The provisions of this Section 5.5 shall survive the termination of the Company, and shall remain binding on the Members for a period of time necessary to resolve with the Internal Revenue Service or the Department of the Treasury or other taxing authority any and all matters regarding the Federal income taxation of the Company and any state, local, or foreign tax matters.

Section 5.6 Auditors. The Company's independent public accountants and auditors shall be Coopers & Lybrand L.L.P. or such other nationally recognized accounting firm as the Members may approve from time to time (the "Auditors"). The Auditors shall be appointed pursuant to an engagement letter between the Company and the Auditors approved by both Members, which letter shall provide that (i) a copy of any Management or Accounting Control Letters of Recommendation or Comment from the Auditors to the Company shall be delivered to the Members approximately contemporaneously with delivery thereof to the Company, and (ii) the Auditors and their work papers shall be available to either Member at reasonable times and upon reasonable advance notice to the Auditors and the Company.

Section 5.7 Business Plan and Budget. Not later than forty-five (45) days prior to the end of each Fiscal Year, the CEO, upon consultation (to the extent reasonably feasible) with the COO and with the assistance and advice of

the CFO and the Comptroller, shall prepare or cause to be prepared and submit to the Members a written business plan and budget of the Company for the following Fiscal Year, which shall include reasonable projections and assumptions concerning (i) costs and expenses to be incurred by the Company, (ii) cost reduction initiatives to be pursued by the Company, (iii) anticipated requirements for further capital contributions to be requested of the Members pursuant to Section 3.4(b), (iv) anticipated revenues available to the Company under the Prime Contract and other sources, (v) estimated Cash Available for Distribution, (vi) amounts payable to each Member or its Affiliates in respect of work to be performed under subcontracts with the Company and (vii) estimated unfunded potential termination liability.

Section 5.8. Permitted Investments. Except as the Members shall otherwise mutually agree, the Company may invest any cash available to it only in the following "Permitted Investments":

- (a) direct obligations of the United States of America and agencies thereof;
- (b) obligations fully guaranteed by the United States of America; or
- (c) domestic time deposits with, or certificates of deposit of, any bank, trust company or national banking

association incorporated or doing business under the laws of the United States of America or one of the states thereof ranked among the top twenty-five (25) U.S. commercial banks in terms of total assets and having a rating of "B" or better by IBCA Inc. or Thomson BankWatch; provided, however, that no investment shall be eligible or included within the definition of the term "Permitted Investment" unless the final maturity of such investment is equal to ninety (90) days or less from the date of such investment and the aggregate amount invested with any individual bank does not exceed \$10,000,000 at any time.

Section 5.9 Members' Services. The Company may from time to time purchase directly from either Member or an Affiliate of either Member (with the agreement of such Member or Affiliate) administrative support services such as accounting, tax, legal, human resource management and other services on an as needed and when needed basis. Such services will be purchased at rates that reflect the actual costs of providing such services, provided that such rates are reasonably competitive with those charged by third parties for such services where competitive quotes are available. The Members understand and agree that the Company is a 50/50 joint venture over which neither Member is deemed to have control, and accordingly the Members believe that the Company is not a "segment" of either Member

or their Affiliates for purposes of Government Cost Accounting Standard 9904.403 ("CAS 403"). The Members shall use their respective reasonable best efforts to obtain the written concurrence of appropriate government agencies as to this belief. If the Company is deemed to be a segment of either Member for purposes of CAS 403, that Member (i) shall be permitted to allocate allowable home office expenses to the Company to the extent provided by CAS 403, (ii) shall be reimbursed by the Company for such expenses to the extent such expenses are allowable and allocable under the Prime Contract or any other contracts the Company may have with the U.S. Government or an agency thereof, and (iii) shall provide to the Company home office services customarily provided by it to other entities participating in the allocation of its allowable home office expenses, provided that (x) such Member shall, in cooperation with the Company and the other Member, use its reasonable best efforts to reach an agreement with NASA and its home office Government contracting officer setting forth a special allocation of its home office expenses to the Company commensurate with the benefits actually received by the Company from the Member's home office in accordance with CAS 403; and (y) in no event will the Member's allowable home office expenses allocated to the Company exceed one percent (1%) of the

Company's allowable costs for work performed by or for the Company.

Section 5.10 Ethics and Legal Compliance. The Company shall be committed to (i) the highest standards of ethical conduct, and (ii) full compliance with all applicable laws and regulations, in every aspect of its affairs and operations. To that end, the CEO, upon consultation (to the extent reasonably feasible) with the COO, shall appoint an individual who is a member of the Company's senior management team as the ethics and compliance officer of the Company. Such individual shall prepare a Code of Ethics and Compliance Manual for the Company for distribution to all appropriate Company employees (and where appropriate, subcontractors and consultants to the Company) and shall oversee or conduct periodic training programs to insure compliance with the Code of Ethics and Compliance Manual. Such individual shall also report at least once each year to the Members as to the Company's compliance with this Section 5.10.

Section 5.11 Insurance. The Company shall maintain insurance coverage at Company expense of such types, in such amounts and with such deductibles or other self insurance provisions as are deemed appropriate to the business in which the Company is engaged, including workers' compensation coverage, fire, theft, auto and other casualty

loss coverage and if agreed to by the Members upon the CEO's recommendation, key man life insurance coverage for specific Company employees and officers.

ARTICLE VI

DISTRIBUTIONS OF CASH; MEMBERS' ACCOUNTS; ALLOCATIONS

Section 6.1 Cash Available for Distribution.

Within three (3) months after the end of each Fiscal Year, and at such other times as agreed to by the Members, the Members shall, in accordance with Section 4.3, determine the amount of Cash Available for Distribution. Cash Available for Distribution shall thereafter be promptly distributed to the Members in proportion to their respective Participation Percentages. It is the intent of the Members that sufficient cash be distributed to the Members at least once each Fiscal Year to enable the payment of taxes on Net Income allocated in accordance with Section 6.3. Notwithstanding this Section 6.1, no distribution shall be made to a Member to the extent such distribution results in such Member having a negative Capital Account, except to the extent distributions of Cash Available for Distribution pursuant to this Section 6.1 result in the Members having equal negative Capital Accounts.

Section 6.2 Maintenance of Capital Accounts.

(a) General Rule. The Company shall maintain for each Member a separate capital account in accordance with Section 704 of the Code and the regulations thereunder ("Capital Account"). Each Member's Capital Account shall be increased by (i) the cash amount or Net Value of all capital contributions made by such Member to the Company, (ii) all items of Net Income allocated to such Member and (iii) any Company liabilities assumed by such Member to the extent not taken into account in the calculation of the Net Value of distributed property and decreased by (A) the cash amount or Net Value of all actual and deemed distributions of cash or property made to such Member, (B) all items of Net Loss allocated to such Member and (C) the amount of any liabilities of such Member assumed by the Company to the extent not taken into account in the calculation of the Net Value of contributed property.

(b) Computation of Items of Income, Gain, Loss or Deduction. For purposes of computing the amount of any item of income, gain, loss or deduction to be reflected in the Members' Capital Accounts, the determination, recognition and classification of any such item shall be the same as its determination, recognition and classification for United States Federal income tax purposes (including any method of

depreciation, cost recovery or amortization used for this purpose), provided that:

(i) In accordance with the requirements of Section 704(c) of the Code and Treasury Regulations Section 1.704-1(b)(2)(iv)(d), any deductions for depreciation, cost recovery or amortization attributable to Contributed Property shall be determined as if the adjusted basis of such property on the date it was acquired by the Company was equal to the fair market value of such property. Upon an adjustment pursuant to Section 6.2(d) to the Carrying Value of any Company property subject to depreciation, cost recovery or amortization, any further deductions for such depreciation, cost recovery or amortization attributable to such property shall be determined as if the adjusted basis of such property was equal to the Carrying Value of such property immediately following such adjustment.

(ii) Any income, gain or loss attributable to the taxable disposition of any property shall be determined by the Company as if the adjusted basis of such property as of such date of disposition was equal in amount to the Company's Carrying Value with respect to such property as of such date.

(iii) The computation of all items of income, gain, loss and deduction shall be made, as to those items described in Section 705(a) (1) (B) or Section 705(a) (2) (B) of the Code, without regard to the fact that such items are not includible in gross income or are neither currently deductible nor capitalizable for United States Federal income tax purposes. For this purpose, amounts paid or incurred to organize the Company or to promote the sale of interests in the Company that are neither deductible nor amortizable under Section 709 of the Code, and deductions for any losses incurred in connection with the sale or exchange of Company assets disallowed pursuant to Section 267(a) (1) or Section 707(b) of the Code, shall be treated as expenditures described in Section 705(a) (2) (B) of the Code.

(c) Transferees. A transferee of a Member's Company Interest in accordance with the terms of this Agreement will succeed to the Capital Account relating to the interest transferred; provided, however, if the transfer causes a termination of the Company under Section 708(b) (1) (B) of the Code, the Company's properties shall be deemed to have been distributed in liquidation of the Company to the Members (including the transferee of a Company Interest) and deemed recontributed by such Members

in reconstitution of the Company. In such event, the Carrying Values of the Company properties shall be adjusted immediately prior to such deemed distribution pursuant to Section 6.2(e) (and such adjusted Carrying Values shall be appropriately taken into account in determining the Net Values of such properties upon this deemed contribution to the reconstituted Company). The Capital Accounts of such reconstituted Company shall be maintained in accordance with the principles of this Section 6.2.

(d) Adjustments to Carrying Values. In accordance with Treasury Regulations Section 1.704-1(b)(2)(iv)(f), in connection with either (i) the contribution of money or other property (other than a de minimis amount) to the Company by a new or existing Member in consideration for an interest in the Company or (ii) a distribution of money or other property (other than a de minimis amount) by the Company to a retiring or continuing Member as consideration for an interest in the Company, the Capital Accounts of all Members and the Carrying Values of all Company properties may at the sole discretion of the Members be adjusted (consistent with the provisions hereof) upwards or downwards to reflect any Unrealized Gain or Unrealized Loss attributable to each such Company property, as if such Unrealized Gain or Unrealized Loss had been recognized upon an actual sale of such

property at such time and had been allocated to the Members, at such time, pursuant to Section 6.3. For purposes of determining such Unrealized Gain or Unrealized Loss, the fair market value of Company assets shall be determined by the mutual agreement of the Members using such reasonable methods of valuation as are deemed appropriate.

(e) Effect of Distributions in Kind on Capital Accounts. In accordance with Treasury Regulations Section 1.704-1(b) (2) (iv) (e), immediately prior to the actual or deemed distribution of any Company property in kind, the Capital Accounts of all Members and the Carrying Value of each such Company property shall be adjusted (consistent with the provisions hereof) upward or downward to reflect any Unrealized Gain or Unrealized Loss attributable to such Company property as if such Unrealized Gain or Unrealized Loss had been recognized upon an actual sale of each such property immediately prior to such distribution and had been allocated to the Members, at such time, pursuant to Section 6.3. For purposes of determining such Unrealized Gain or Unrealized Loss, the fair market values of relevant Company properties shall be determined by the mutual agreement of the Members using such reasonable methods of valuation as are deemed appropriate.

Section 6.3 Allocations of Net Income and Net Loss.

(a) In General. Subject to Section 6.3(b), Net Income and Net Loss shall be allocated to the Members in proportion to their Participation Percentages.

(b) Special Provisions Governing Allocations to Members. To the extent inconsistent with the provisions of Section 6.3(a), the following special provisions shall govern allocations to the Members:

(i) (A) If there is a net decrease in "partnership minimum gain" (within the meaning of Treasury Regulations Section 1.704-2(b)(2)) during a taxable year, each Member shall (subject to the exceptions set forth in Treasury Regulations Section 1.704-2(f)) be allocated items of income and gain for such year (and, if necessary, for subsequent years) equal to the portion of such Member's share of the net decrease in partnership minimum gain. This Section 6.3(b)(i)(A) is intended to be a "minimum gain chargeback" within the meaning of Treasury Regulations Section 1.704-2(f), and is to be interpreted to comply with the requirements of such regulation.

(B) If there is a net decrease in "partner nonrecourse debt minimum gain" (within the meaning of the Treasury Regulations Section 1.704-2(i)(2)) during

a taxable year, each Member shall (subject to the exceptions set forth in Treasury Regulations Section 1.704-2(i)(4)) be allocated items of income and gain for such year (and, if necessary, for subsequent years) equal to the portion of such Member's share of the net decrease in partner nonrecourse debt minimum gain.

This Section 6.3(b)(i)(B) is intended to be a "minimum gain chargeback" within the meaning of Treasury Regulations Section 1.704-2(i), and is to be interpreted to comply with the requirements of such regulations.

(ii) If any Member unexpectedly receives any adjustments, allocations or distributions described in Treasury Regulations Section 1.704-1(b)(2)(ii)(d)(4), 1.704-1(b)(2)(ii)(d)(5), or 1.704-1(b)(2)(ii)(d)(6), items of income and gain shall be specially allocated to such Member in an amount and manner sufficient to eliminate a deficit in its Capital Account (after taking into account adjustments, distributions and allocations described in Treasury Regulations Section 1.704-1(b)(2)(ii)(d)(4), (5) and (6)) in excess of its obligations to restore such deficit (within the meaning of Treasury Regulations Section 1.704-1(b)(2)(ii)(d)) created by such adjustments, allocations or distributions as quickly as possible. This Section

6.3(b)(ii) is intended to constitute a "qualified income offset" within the meaning of Treasury Regulations Section 1.704-1(b)(2)(ii)(d)(3) and is to be interpreted to comply with the requirements of such regulation.

(iii) In accordance with Treasury Regulations Section 1.704-2,

(A) any items of partnership loss, deduction or expenditure (including expenditures described in Section 705(a)(2)(B) of the Code) that are attributable to liabilities of the Company for which no Member bears the economic risk of loss shall be allocated in the same manner as Net Losses hereunder, and

(B) any items of partnership loss, deduction or expenditure (including expenditures described in Section 705(a)(2)(B) of the Code) that are attributable to nonrecourse debt of the Company for which one or more Members bears the economic risk of loss shall be allocated to each Member in proportion to the extent to which such Member bears such economic risk of loss.

(iv) Any special allocations of items of income or gain pursuant to Sections 6.3(b)(i), (ii) and (iii) shall be taken into account in computing subsequent

allocations of items of income, gain, deduction, or loss so that the net amounts of any items so allocated shall, to the extent possible and consistent with such Sections as determined by mutual agreement of the Members, be equal to the net amounts that would have been allocated to each Member had the allocations made pursuant to such Sections not been made. In exercising their discretion under this Section 6.3(b)(iv), the Members shall give due regard to future allocations under Sections 6.3(b)(i)(A) and (B) that, although not yet made, are likely to offset other allocations previously made under Sections 6.3(b)(iii)(A) and (B).

(c) Allocations for Tax Purposes.

(i) For United States Federal income tax purposes, except as otherwise provided in this Section 6.3(c), each item of income, gain, loss, and deduction of the Company shall be allocated among the Members in the same proportions as items comprising Net Income or Net Loss, as the case may be, are allocated among the Members. Credits shall be allocated as provided in Treasury Regulations Section 1.704-1(b)(4)(ii). The Members agree to be bound by the provisions of this Article VI in reporting their share of Company income and loss for income tax purposes.

(ii) In the case of Contributed Property and Adjusted Property, items of income, gain, loss, depreciation, amortization and cost recovery shall be allocated among the Members in a manner consistent with the principles of Section 704(c) of the Code and the regulations thereunder. Each Member shall, as soon as practicable after each Subsequent Closing Date, provide to the Company information regarding such Member's tax basis in any assets (other than cash) contributed to the capital of the Company on such Subsequent Closing Date. The Members agree that the Company shall use the remedial allocation method described in Treasury Regulations Section 1.704-3(d) for purposes of complying with Section 704(c) of the Code.

(iii) To the extent permissible under applicable Treasury Regulations, the amount of any gain from a disposition allocated to (or recognized by) a Member (or its successor in interest) for United States Federal income tax purposes pursuant to the above provisions shall be deemed to be Recapture Income to the extent such Member has been allocated any deduction or credit directly or indirectly giving rise to the treatment of such gain as Recapture Income.

(iv) All items of income, gain, loss, deduction and credit recognized by the Company for United States

Federal income tax purposes and allocated to the Members in accordance with the provisions hereof shall be determined without regard to any adjustment made pursuant to Section 743 of the Code; provided, however, that such allocations, once made, shall be adjusted as necessary or appropriate to take into account those adjustments permitted by Section 743 of the Code, and any adjustments made pursuant to Section 734 of the Code shall be allocated to the extent permitted under and in accordance with the rules of Treasury Regulations Section 1.704-1(b) (2) (iv) (m) .

(d) Other Rules Pertaining to Allocations. The Tax Matters Partner may (with the approval of both Members as to the following clauses (i), (iii), (iv) and (v)) adopt and employ such methods and procedures for (i) the determination and allocation of adjustments under Sections 704(c), 734 and 743 of the Code, (ii) the provision of tax information and reports to Members, (iii) the adoption of reasonable conventions and methods for the valuation of assets and the determination of tax basis and the maintenance of the Company's Capital Accounts, (iv) the allocation of asset values and tax basis, and (v) conventions for the determination of cost recovery, depreciation and amortization deductions and the maintenance of inventories, as it determines are necessary and

appropriate to execute the provisions of this Agreement, and to comply with United States Federal and state tax laws. To the fullest extent permitted by law, the Tax Matters Partner shall be indemnified and held harmless by the Company for any expenses, penalties or other liabilities arising as a result of decisions made in good faith on any of the matters referred to in the preceding sentence.

ARTICLE VII

COMPANY OPERATIONS

Section 7.1 Company Expenses. Except as otherwise provided herein, the Company shall be responsible for the payment of all its own expenses.

Section 7.2 Bank Accounts. The Company shall open, maintain and manage its receipts and disbursements through a bank account or accounts established at such banks organized under the laws of the United States or any state thereof as the CEO shall designate from time to time, provided that all accounts are located in the United States and are in the name of the Company. The CEO shall also designate the persons authorized to deposit and withdraw funds from such accounts and determine their signature limits, provided that the signatures of at least two persons shall be required to authorize the withdrawal of \$100,000 or

more of Company funds in any single transaction or by any single negotiable instrument.

Section 7.3 Non-Disclosure.

(a) Generally. Except as otherwise required by law or judicial process, each Member and its Affiliates shall keep confidential any and all unpublished or confidential information learned or received from or through the other Member, its Affiliates or the Company including, without limitation, any technology, know-how, process information, confidential business information relating to the other Member, its Affiliates or the Company and budgets, financial statements, operating plans and books of account of the Company. Any and all documents and written materials received by a Member, its Affiliates or the Company from the other Member, its Affiliates or the Company, including without limitation the Schedules hereto, shall be presumed confidential.

(b) Exceptions. The foregoing confidentiality obligation shall not apply to information which: (i) appears in issued patents, published patent applications or other publications which are generally available, (ii) otherwise is or becomes generally known to the public other than through the receiving party or its officers, employees, agents or Affiliates, (iii) is lawfully obtained from a third party under no duty of confidentiality to the other

party or (iv) was otherwise in the possession of a Member prior to disclosure by the other Member or the Company making such confidential information available; provided, that information shall not be deemed to be within the foregoing exceptions merely because such information is embraced by more general information in the public domain or in a Member's prior possession, and provided further, that any combination of features shall not be within the foregoing exceptions merely because individual features are in the public domain or in a Member's prior possession, but only if the combination itself is in the public domain or in a Member's prior possession.

(c) Access. Each Member shall use its best efforts to ensure that only persons who (i) are officers, employees or agents (including accountants and lawyers) of the Company or of either Member or any Affiliate thereof, (ii) require such confidential information in connection with the activities of the Company or such Member or Affiliate as contemplated hereunder, and (iii) are bound by the terms of an employment or non-disclosure agreement which imposes similar undertakings and obligations as to confidentiality shall be permitted access to such confidential information.

(d) Security Requirements. Each Member shall use its reasonable best efforts to comply with the requirements

of the then current Defense Industrial Security Manual as such may apply to the business and operations of the Company, including with respect to the operation of any facilities of the Company.

(e) Injunctive Relief. Each Member acknowledges that the disclosure of any confidential information by it, its Affiliates or its or their employees or agents will give rise to immediate irreparable injury to the other Member and its Affiliates including in the form of a loss of competitive advantage, which is inadequately compensable in damages, in addition to any injury which may be compensable in damages. RSAC and its Affiliates on the one hand and LMSAC and its Affiliates on the other may obtain immediate and permanent injunctive relief against the breach or threatened breach of the foregoing undertakings, in addition to any other legal remedies which may be available. Each Member further acknowledges and agrees that the covenants contained herein are reasonably necessary for the protection of the legitimate business interests of the other Member and are reasonable in scope and content.

(f) Exchange of Information. Neither Member shall produce to or exchange with the other Member any competitively sensitive information until the General Counsel of each of Rockwell and LMC or their respective designees have reached the independent determination made in

good faith, that the production or exchange of such information will not violate the Antitrust Laws (as defined in the Master Agreement). For these purposes, the term "competitively sensitive information" shall mean: (i) information concerning allowable and unallowable costs, including rates for services and price quotes or bids provided to any government agency or other customer, (ii) trade secrets or confidential practices, methods or processes or (iii) any business plans, strategic plans or competitive strategies.

(g) Survival. This Section 7.3 shall survive any termination of this Agreement for a period of five (5) years.

ARTICLE VIII

TRANSFERS OF COMPANY INTERESTS

Section 8.1 Transfer of Interest. A Member may not sell, transfer, assign or otherwise dispose of all or any portion of its Company Interest, except in accordance with the provisions of this Article VIII. A Member may sell, transfer, assign or otherwise dispose of its entire Company Interest (a "Transfer") only if (a) such Member (the "Withdrawing Member") obtains the prior written consent (which consent shall be deemed an agreement to continue the Company as provided for in the proviso to Section 10.1(c))

of the other Member (the "Continuing Member"), which consent may be given or withheld in the sole and absolute discretion of the Continuing Member, (b) the Withdrawing Member shall not be in default under any provision of this Agreement, or the default (if any) is waived in writing by the Continuing Member, (c) Rockwell (if RSAC is the Withdrawing Member) or LMC (if LMSAC is the Withdrawing Member) shall not be in default under any provision of the Master Agreement or the Guaranty executed and delivered by it thereunder, or the default (if any) is waived in writing by the Continuing Member, (d) such Transfer relates to a single successor in ownership of and beneficial interest in such Company Interest, (e) such successor is not subject to foreign ownership, interest or control within the meaning of regulations promulgated by the Committee on Foreign Investment in the United States, pursuant to Section 721 of the Defense Production Act, 50 App. U.S.C.A. § 2170, and (f) such successor assumes and agrees, by an instrument in form and substance satisfactory to the Continuing Member, to carry out all obligations of the Withdrawing Member under this Agreement and to be bound unequivocally by all the terms and provisions of this Agreement. Upon any acquisition of a Withdrawing Member's Company Interest by a transferee in accordance with this Article VIII, such transferee shall be admitted as a Member of the Company for

purposes of this Agreement, with the same rights, privileges, duties and obligations of the Withdrawing Member and immediately following such admission, the Withdrawing Member shall cease to be a Member of the Company. A Transfer by a Withdrawing Member of its entire Company Interest to a wholly-owned Affiliate (which Transfer cannot be made without the consent of the Continuing Party as provided above) cannot be made unless Rockwell (if RSAC is the Withdrawing Member) or LMC (if LMSAC is the Withdrawing Member) executes and delivers to the Continuing Party and to LMC or Rockwell, as the case may be, a Guaranty of the performance by such wholly-owned Affiliate of certain of its obligations under this Agreement in substantially the form of Exhibit B or C, respectively, to the Master Agreement.

Section 8.2 Obligations of a Withdrawing Member.

(a) Generally. No disposition by a Withdrawing Member of its Company Interest shall relieve such Withdrawing Member of any of its liabilities and obligations, including those to the Company or to the Continuing Member, which arose or accrued from events, acts or omissions occurring prior to the effective date of such disposition.

(b) Survival. The rights and obligations of the Members under this Section 8.2 shall survive any termination of this Agreement.

Section 8.3 Non-Disclosure by a Withdrawing Member. In the case of a sale or other transfer of a Withdrawing Member's Company Interest pursuant to this Article VIII or Section 10.2, the Withdrawing Member shall continue to be subject to the provisions of Section 7.3. The rights and obligations of the Members under this Section 8.3 shall survive any termination of this Agreement.

Section 8.4 Effect of Unauthorized Transfer. No transfer or other disposition of any Company Interest in violation of any provision of this Agreement shall be effective to pass any title to, or create any interest in favor of, any Person, but the Member which attempted to so effect such transfer or other disposition shall be deemed to have committed a material breach of its obligations to the other Member hereunder.

Section 8.5 Encumbrances. No Member shall at any time mortgage, pledge, charge or encumber, or create or suffer to exist a mortgage, pledge, lien, charge, encumbrance or security interest ("Lien"), with respect to all or any part of its Company Interest. If a Lien shall attach to a Member's Company Interest, such Member agrees to cause such Lien to be discharged promptly at its own expense.

Section 8.6 Equity Securities of Members. A Member shall not issue, or obligate itself to issue, any of

its equity securities other than to an Affiliate of such Member.

ARTICLE IX

DEFAULT

Section 9.1 Default. A Member which fails to perform any one or more of its obligations hereunder shall be deemed to be in default under this Agreement.

Section 9.2 Unpaid Cash Assessments and Interest Thereon. Any unpaid cash assessment required to be paid pursuant to Article III shall constitute a debt due and payable to the Company by the Member obligated to pay the same, and shall be enforceable by the Company and the non-defaulting Member on behalf and in the name of the Company. A defaulting Member shall pay interest to the Company on each such unpaid cash assessment (and on any unpaid interest on the basis of daily compounding) at the prime commercial rate of interest charged from time to time by major U.S. banks as published in The Wall Street Journal (the "Prime Rate") plus 3%, computed on the basis of a 360-day year and the actual number of days elapsed from the date when payment of such cash assessment was due to the date of actual payment of such cash assessment in full. The provisions of this Section 9.2 shall be in addition to and shall not limit

any rights provided to a Contributing Member pursuant to Section 3.5 or otherwise in this Agreement.

Section 9.3 No Offset. Any amount due to the Company, to a Member or to any Affiliate of a Member under this Agreement shall be payable without any right of offset or charge against such amount for any other claim of, or amount owing to, the Person by whom such amount is payable, provided that this provision shall not apply in respect of any default by a Member in making any required cash contribution to the capital of the Company.

ARTICLE X

DISSOLUTION, LIQUIDATION AND TERMINATION

Section 10.1 Events of Dissolution. The Company shall be dissolved upon the occurrence of any of the following events:

- (a) the written agreement of the Members to dissolve the Company;
- (b) the written election of a Member that is not in material default or material breach under any of the provisions of this Agreement, if there is a material default by the other Member in its obligations hereunder, or there is a material breach by the other Member of its representations and warranties hereunder, and such default or breach, as the case may be, shall

not have been cured by the defaulting or breaching Member within twenty (20) business days after notice of such default or breach has been given by the non-defaulting, non-breaching Member to the defaulting Member and to Rockwell (if RSAC is the defaulting or breaching Member) or to LMC (if LMSAC is the defaulting or breaching Member);

(c) upon (i) the admission in writing by a Member of its inability to pay its debts as they become due; (ii) the institution by a Member of proceedings for relief as a debtor under United States law, as now constituted or hereafter in effect, including, without limitation, Title 11 of the United States Bankruptcy Code, or under any state or other law for the relief of debtors; (iii) the institution against a Member or its direct or indirect parent of any proceeding seeking to adjudicate it bankrupt or insolvent, or seeking liquidation or reorganization under any bankruptcy, insolvency or similar laws for the relief of debtors, or seeking the appointment of a receiver or equivalent official for any substantial part of its assets, and such proceeding shall not have been dismissed or withdrawn within sixty (60) days from the date of the institution thereof; (iv) the making by a Member or its direct or indirect parent of an assignment for the

benefit of creditors; (v) the appointment of a receiver or trustee for the business or properties of a Member or its direct or indirect parent; or (vi) the occurrence of any other event described in Section 18-801(4) of the Act with respect to a Member; provided, that the occurrence of an event described in this Section 10.1(c) shall not result in the dissolution of the Company if within ninety (90) days after the occurrence of such event the Member not subject to such event agrees to continue the Company;

(d) the written election of RSAC if Rockwell is terminating the Master Agreement pursuant to Section 7.2 thereof;

(e) the written election of LMSAC if LMC is terminating the Master Agreement pursuant to Section 7.2 thereof; or

(f) the Delaware Court of Chancery has entered a final decree pursuant to Section 18-802 of the Act.

Section 10.2 Purchase of Company Interest.

(a) Perfection of Right. If an event of dissolution has occurred pursuant to Section 10.1(b), 10.1(c), 10.1(d) or 10.1(e), the Member that is not in material default of its obligations under this Agreement and did not commit a material breach of its representations and warranties hereunder with respect to situations described in

Section 10.1(b), the Member that is not the subject of an event described in Section 10.1(c) (whether or not an election is made pursuant to the proviso to Section 10.1(c)), RSAC (in the case of an event described in Section 10.1(d)), or LMSAC (in the case of an event described in Section 10.1(e)), respectively, may elect to purchase the Company Interest of the other Member, and the other Member shall have a corresponding obligation to sell such Company Interest in the event of such an election. In the event that a Member shall elect to purchase the Company Interest of the other Member pursuant to this Section 10.2, the selling Member shall be deemed a Withdrawing Member and the purchasing Member shall be deemed to be a Continuing Member and in each case shall be subject to the obligations and entitled to the rights specified in Sections 8.2 and 8.3. The purchase price for the Withdrawing Member's Company Interest shall be 100% of the fair market value of such Company Interest, determined as provided in Section 10.6, less all damages caused to the Continuing Member and its Affiliates by virtue of any default or breach by the Withdrawing Member. An election under this Section 10.2 to purchase such Company Interest shall be exercisable by the Continuing Member by notice to the Company and to the Withdrawing Member given within sixty (60) days after the Continuing Member first receives notice of the occurrence of

any event of dissolution specified in Section 10.1(b), 10.1(d) or 10.1(e), or within 180 days after the Continuing Member first receives notice of the occurrence of an event described in Section 10.1(c), whichever is applicable, and such purchase shall be consummated as soon as practicable following the conclusion of the valuation procedure established by Section 10.6. A Continuing Member may assign its right to purchase the Company Interest of a Withdrawing Member pursuant to this Section 10.2 to one or more Persons.

(b) Survival. The rights and obligations of each of the Members under this Section 10.2 shall survive termination of this Agreement and dissolution of the Company.

Section 10.3 Liquidation and Distribution Following Dissolution. If an event of dissolution has occurred pursuant to Section 10.1, and no Member is entitled to exercise the rights set forth in Section 10.2 (or, if so entitled, does not exercise such rights), the Company shall be wound up and liquidated in accordance with applicable law and the following provisions (unless the Company is continued on a basis mutually acceptable to the Members):

(a) Each Member shall pay to the Company all amounts owed by it to the Company;

(b) The assets of the Company, including any monies received pursuant to Section 10.3(a), shall be applied in the following order:

First, to the payment of creditors of the Company, including Members who are creditors, to the extent otherwise permitted by law;

Second, to the establishment of any reserves that the Members (subject to Section 10.4), in accordance with sound business judgment, deem reasonably necessary to provide for the payment when due of any contingent liabilities or obligations of the Company (which reserves may be paid over by the Members to a trustee or escrow agent selected by them to be held by such trustee or escrow agent for purposes of (i) distributing such reserves in payment of the aforementioned contingencies, and (ii) distributing the balance of such reserves in the manner provided herein upon the expiration of such period as the Members may deem advisable).

Third, to the Members in accordance with their positive Capital Account balances.

Consistent with the regulations pursuant to Section 704 of the Code, in the event of a liquidation, as defined in Treasury Regulations Section 1.704-1(b)(2)(ii)(g), the value of all property of the Company to be distributed shall be,

or shall have been, appropriately reflected in the Capital Accounts.

(c) In the event of any liquidation pursuant to this Section 10.3, the assets of the Company shall be converted into cash as promptly as possible without undue sacrifice, and any receivables shall be collected or sold, all in an orderly and businesslike manner. Notwithstanding the foregoing, the Members may agree not to sell all or any portion of the Company Assets, in which event such Company Assets shall be distributed in kind pursuant to Section 10.3(b).

(d) Notwithstanding anything to the contrary in this Agreement, upon a liquidation (within the meaning of Treasury Regulations § 1.704-1(b)(2)(ii)(g)), if any Member has a deficit Capital Account (after giving effect to all contributions, distributions, allocations and other Capital Account adjustments for all Fiscal Years, including the year in which such liquidation occurs), such Member shall have no obligation solely as a result of such deficit to make any capital contribution, and the negative balance of such Capital Account shall not be considered a debt owed by the Member to the Company or to any other Person for any purpose whatsoever.

(e) Any distributions to the Members in respect of their Capital Accounts pursuant to this Section 10.3

shall be made in accordance with the time requirements set forth in Treasury Regulations § 1.704-1(b)(2)(ii)(b)(2).

Section 10.4 One Liquidator. If the Company is dissolved by reason of the occurrence of an event described in Section 10.1(b), 10.1(c), 10.1(d) or 10.1(e), the Member that is not in material default of its obligations under this Agreement and did not commit a material breach of its representations and warranties hereunder with respect to situations described in Section 10.1(b), the Member that is not the subject of an event described in Section 10.1(c), RSAC (in the case of an event described in Section 10.1(d)), or LMSAC (in the case of an event described in Section 10.1(e)), respectively, shall have the sole authority to wind up the Company's affairs, establish, and set the period for, reserves pursuant to Section 10.3, and supervise its liquidation, subject to the provisions of Section 10.5 and the guidance of the Company's Auditors.

Section 10.5 Final Accounting. Upon the liquidation of the Company, the Auditors shall prepare a final accounting statement as soon as reasonably practicable after all of the business of the Company has been concluded, all monies payable to the Company have been received and all expenses and obligations of the Company have been paid, satisfied or otherwise provided for.

Section 10.6 Appraisal and Valuation. In the event that a Member is entitled to purchase the Company Interest of another Member pursuant to Section 10.2 and the Members cannot agree on the fair market value of the Company Interest, such Company Interest shall be valued as follows:

(a) Within sixty (60) days after a Member gives notice of its election to purchase the Company Interest of the other Member in accordance with Section 10.2, each Member shall select an appraiser and within 15 days after the date the latter of such two appraisers has been selected and has agreed to serve, the two appraisers shall select a third appraiser, provided that (i) if either Member does not select an appraiser who agrees to serve as such within the aforementioned 60-day period, then the determination of value by the appraiser who is selected and agrees to serve within such period shall be final, and (ii) if no third appraiser who is agreeable to serving as such is selected by the first two appraisers within the aforementioned 15-day period, then the third appraiser shall be selected in accordance with the rules of the American Arbitration Association. All costs and expenses of any such appraisers shall be shared equally by the Members.

(b) The Company shall be appraised as a going concern unless the Prime Contract has been terminated and the Company is not engaged in any material operations, and the value of the Company Interest shall be equal to the total value of the Company as so determined multiplied by the Participation Percentage represented by the Company Interest.

(c) Once each of such appraisers (if there are more than one) has submitted to the Members its appraisal of the value of the Company Interest, the value of such Company Interest shall be determined as follows:

First, only the two appraisals which are closest to each other shall be considered, and the third appraisal shall be disregarded; and

Second, the value of the Company Interest shall be computed by averaging the two remaining appraisals;

provided, however, that if the difference between the lowest and the middle appraisal and the difference between the middle and the highest appraisal are equal, the value shall be the average of the three appraisals.

(d) If within sixty (60) days after the date when all three appraisers have agreed to serve as such one or more appraisals has not been submitted to the

Members, then (i) if two appraisals have been so submitted within such 60-day period, the value of the Company Interest shall be determined by averaging such two appraisals, and (ii) if only one appraisal has been so submitted within such 60-day period, the value of the Company Interest shall be determined solely by reference to such appraisal.

ARTICLE XI

REPRESENTATIONS AND WARRANTIES

Section 11.1 By RSAC. RSAC hereby represents and warrants to LMSAC as follows:

(a) Organization. RSAC is a corporation duly organized, validly existing and in good standing under the laws of the State of Delaware and has full corporate power and authority to own and operate its assets and properties and to carry on its business as presently being conducted and as presently proposed to be conducted (including in the manner contemplated by this Agreement) and is duly qualified to do business and is in good standing in all jurisdictions in which the ownership or occupancy of its properties or its activities presently make such qualification necessary, except where the failure to so qualify would not have a material adverse effect upon its business, properties or assets. RSOC, a direct wholly-owned subsidiary of Rockwell,

is the record and beneficial owner of all outstanding capital stock of RSAC.

(b) Authority. RSAC has all requisite corporate power and authority to execute and deliver this Agreement, to perform its obligations hereunder and to consummate the transactions contemplated hereby. The execution, delivery and performance of this Agreement by RSAC and the consummation by RSAC of the transactions contemplated hereby have been duly and validly authorized and approved by all requisite corporate proceedings of RSAC. This Agreement has been duly and validly executed and delivered by RSAC and constitutes a legal, valid and binding obligation of RSAC, enforceable against RSAC in accordance with its terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium and similar laws affecting creditors' rights generally and to general principles of equity.

(c) Consents and Approvals. Except as set forth in Schedule 11.1(c) attached hereto and made a part hereof, all authorizations, approvals and consents, if any, required to be obtained from, and all registrations, declarations and filings, if any, required to be made with, all governmental authorities and regulatory bodies to permit RSAC to execute and deliver this Agreement and to perform its obligations hereunder have been obtained or made, as the case may be,

and all such authorizations, approvals, consents, registrations, declarations and filings are in full force and effect, in each case to the extent necessary prior to the date hereof. All terms and conditions contained in, or existing in respect of, such authorizations, approvals, consents, registrations, declarations and filings have been, to the extent necessary prior to the date of execution and delivery hereof, duly satisfied and performed.

(d) No Violations or Conflicts. The execution, delivery and performance of this Agreement by RSAC do not and will not (i) violate or conflict with any provision of, or result in the breach of, any applicable statute, law, rule or regulation of any governmental authority or regulatory body, the Certificate of Incorporation or By-laws of RSAC, or any contract, agreement, indenture or other instrument or obligation to which RSAC is a party or by which RSAC or any of its assets is bound, or of any order, judgment, writ, injunction, award, ruling or decree applicable to RSAC or any of its assets, or terminate or result in the termination of any such contract, agreement, indenture, instrument or obligation or (ii) constitute an event which, after notice or lapse of time or both, would result in any such violation, conflict, breach or termination or result in a violation or revocation of any permit from any governmental authority, regulatory body or

other third party, except to the extent that the occurrence of any of the foregoing would not individually or in the aggregate have a material adverse effect on the ability of RSAC to consummate the transactions contemplated hereby.

(e) Litigation. There is no action, suit or proceeding pending, or to the knowledge of RSAC threatened, against RSAC which questions the validity of this Agreement or any action taken or to be taken pursuant to or in connection with this Agreement or which would, if adversely determined, affect in any material respect the Company's rights under this Agreement or the ability of RSAC to perform its obligations hereunder.

Section 11.2 By RSAC As Of The Date Of Each Subsequent Closing Date. RSAC shall represent and warrant to LMSAC in writing that as of the date of each Subsequent Closing Date:

(a) Prior Representations and Warranties. The representations and warranties contained in Section 11.1 continue to be true and correct on such Subsequent Closing Date as though such representations and warranties were made at and as of such time.

(b) Fixed Assets. Except as set forth in the relevant Subsequent Closing Date Schedule, on such Subsequent Closing Date RSAC will have good and marketable title to each of the assets listed in the relevant

Subsequent Closing Date Schedule, subject to no mortgage, lien, lease, pledge, encumbrance, charge, conditional sale or other title retention agreement or restriction on sale. Such assets will be in a condition adequate and suitable for the purposes for which they have been used in the conduct of the business of RSAC prior to such Subsequent Closing Date.

(c) Contracts and Leases. Except as set forth in the relevant Subsequent Closing Date Schedule, (i) RSAC will have delivered to the Company complete and correct copies of all contracts, leases and agreements listed in the relevant Subsequent Closing Date Schedule, (ii) all such contracts, leases and agreements will be legal, valid and binding obligations of RSOC and (iii) to the best knowledge of RSAC, such contracts, leases and agreements will be the legal, valid and binding obligations of the other parties thereto and there will be no material defaults under any such contracts, leases and agreements.

(d) Transfers Sufficient. Except as set forth in the relevant Subsequent Closing Date Schedule, (i) the assets and interests, taken as a whole, described in the relevant Subsequent Closing Date Schedule will on such Subsequent Closing Date be sufficient to enable the Company to conduct RSOC's business as conducted by RSOC prior to such Subsequent Closing Date, and (ii) the relevant Subsequent Closing Date Schedule will constitute a true and

complete list of, respectively, all assets, and all contracts, bids, purchase orders and agreements, and all leases, subleases, easements, licenses and other agreements relating to the occupancy or use of the RSAC Facility, that are material to the conduct of RSOC's business as conducted by RSOC prior to such Subsequent Closing Date.

(e) RSAC Facility. Except as set forth in the relevant Subsequent Closing Date Schedule, RSOC has not within the three years prior to such Subsequent Closing Date received any written notice or claim from any governmental body or official or private person to the effect that it is in violation of any term of any applicable law, ordinance, rule or regulation of any governmental authority or any term of any applicable order, judgment or decree of any court, arbitrator or governmental authority (including, without limitation, any law, ordinance, rule, regulation or order relating to environmental or occupational health or safety standards and controls, consumer protection or equal employment practices) relating to any RSAC Facility set forth on such Subsequent Closing Date Schedule or the use thereof, the violation of which would have a material adverse effect upon RSAC or the Company. The leases and agreements listed on such Subsequent Closing Date Schedule, when assigned and transferred to the Company, will be sufficient on such Subsequent Closing Date to allow

continued use of such RSAC Facility by the Company, in substantially the same manner as used by RSOC prior to such Subsequent Closing Date in connection with its business, without material additional action or payments, except as expressly set forth in the leases and agreements listed in such Subsequent Closing Date Schedule.

(f) Compliance with Laws. Except as set forth in the relevant Subsequent Closing Date Schedule, the property and assets which RSAC is contributing to the Company and which are listed in the relevant Subsequent Closing Date Schedule (i) were maintained by RSAC or an Affiliate thereof in all material respects in compliance with all applicable laws and regulations, and (ii) if consisting of one or more contracts with the U.S. government or an agency thereof, were entered into and performed by RSAC or an Affiliate thereof in compliance with the Truth in Negotiations Act of 1962, as amended, The Service Contract Act of 1965, as amended, The Contract Disputes Act of 1978, as amended, the Federal Acquisition Regulations and any applicable agency supplements thereto, as well as applicable predecessor procurement regulations, Government Cost Accounting Standards, any applicable agreements with a U.S. Government contract cost accounting agency, the Byrd Amendment, Pub. L. No. 101-121, § 319, and the Defense Industrial Security Manual and the Defense Industrial Security Regulation.

(g) Other. Such other representations and warranties as are customarily made upon the transfer of the types of assets and properties RSAC is contributing to the Company, as may reasonably be requested by LMSAC.

Section 11.3. By LMSAC. LMSAC hereby represents and warrants to RSAC as follows:

(a) Organization. LMSAC is a corporation duly organized, validly existing and in good standing under the laws of the State of Delaware and has full corporate power and authority to own and operate its assets and properties and carry on its business as presently being conducted and as presently proposed to be conducted (including in the manner contemplated by this Agreement) and is duly qualified to do business and is in good standing in all jurisdictions in which the ownership or occupancy of its properties or its activities presently make such qualification necessary, except where the failure to so qualify would not have a material adverse effect upon its business, properties or assets. LSOC, an indirect wholly-owned subsidiary of LMC, is the record and beneficial owner of all outstanding capital stock of LMSAC.

(b) Authority. LMSAC has all requisite corporate power and authority to execute and deliver this Agreement, to perform its obligations hereunder and to consummate the transactions contemplated hereby. The execution, delivery

and performance of this Agreement by LMSAC and the consummation by LMSAC of the transactions contemplated hereby have been duly and validly authorized and approved by all requisite corporate proceedings of LMSAC. This Agreement has been duly and validly executed and delivered by LMSAC and constitutes a legal, valid and binding obligation of LMSAC, enforceable against LMSAC in accordance with its terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium and similar laws affecting creditors' rights generally and to general principles of equity.

(c) Consents and Approvals. Except as set forth in Schedule 11.2(c) attached hereto and made a part hereof, all authorizations, approvals and consents, if any, required to be obtained from, and all registrations, declarations and filings, if any, required to be made with, all governmental authorities and regulatory bodies to permit LMSAC to execute and deliver this Agreement and to perform its obligations hereunder have been obtained or made, as the case may be, and all such authorizations, approvals, consents, registrations, declarations and filings are in full force and effect, in each case to the extent necessary prior to the date hereof. All terms and conditions contained in, or existing in respect of, such authorizations, approvals, consents, registrations, declarations and filings have been,

to the extent necessary prior to the date of execution and delivery hereof, duly satisfied and performed.

(d) No Violations or Conflicts. The execution, delivery and performance of this Agreement by LMSAC do not and will not (i) violate or conflict with any provision of, or result in the breach of, any applicable statute, law, rule or regulation of any governmental authority or regulatory body, the Certificate of Incorporation or By-laws of LMSAC, or any contract, agreement, indenture or other instrument or obligation to which LMSAC is a party or by which LMSAC or any of its assets is bound, or of any order, judgment, writ, injunction, award, ruling or decree applicable to LMSAC or any of its assets, or terminate or result in the termination of any such contract, agreement, indenture, instrument or obligation or (ii) constitute an event which, after notice or lapse of time or both, would result in any such violation, conflict, breach or termination or result in a violation or revocation of any permit from any governmental authority, regulatory body or other third party, except to the extent that the occurrence of any of the foregoing would not individually or in the aggregate have a material adverse effect on the ability of LMSAC to consummate the transactions contemplated hereby.

(e) Litigation. There is no action, suit or proceeding pending, or to the knowledge of LMSAC threatened,

against LMSAC which questions the validity of this Agreement or any action taken or to be taken pursuant to or in connection with this Agreement or which would, if adversely determined, affect in any material respect the Company's rights under this Agreement or the ability of LMSAC to perform its obligations hereunder.

Section 11.4 By LMSAC as of the Date of Each Subsequent Closing Date. LMSAC shall represent and warrant in writing to RSAC that as of each Subsequent Closing Date:

(a) Prior Representations and Warranties. The representations and warranties contained in Section 11.3 continue to be true and correct on such Subsequent Closing Date as though such representations and warranties were made at and as of such time.

(b) Fixed Assets. Except as set forth in the relevant Subsequent Closing Date Schedule, on such Subsequent Closing Date LMSAC will have good and marketable title to each of the assets listed in the relevant Subsequent Closing Date Schedule, subject to no mortgage, lien, lease, pledge, encumbrance, charge, conditional sale or other title retention agreement or restriction on sale. Such assets will be in a condition adequate and suitable for the purposes for which they have been used in the conduct of the business of LSOC prior to such Subsequent Closing Date.

(c) Contracts and Leases. Except as set forth in the relevant Subsequent Closing Date Schedule, (i) LSOC will have delivered to the Company complete and correct copies of all contracts, leases and agreements listed in the relevant Subsequent Closing Date Schedule, (ii) all such contracts, leases and agreements will be legal, valid and binding obligations of LSOC and (iii) to the best knowledge of LMSAC, such contracts, leases and agreements will be the legal, valid and binding obligations of the other parties thereto and there will be no material defaults under any such contracts, leases and agreements.

(d) Transfers Sufficient. Except as set forth in the relevant Subsequent Closing Date Schedule, (i) the assets and interests, taken as a whole, described in the relevant Subsequent Closing Date Schedule will on such Subsequent Closing Date be sufficient to enable the Company to conduct LSOC's business as conducted by LSOC prior to such Subsequent Closing Date, and (ii) the relevant Subsequent Closing Date Schedule will constitute a true and complete list of, respectively, all assets, and all contracts, bids, purchase orders and agreements, and all leases, subleases, easements, licenses and other agreements relating to the occupancy or use of the LMSAC Facility, that are material to the conduct of LSOC's business as conducted by LSOC prior to such Subsequent Closing Date.

(e) LMSAC Facility. Except as set forth in the relevant Subsequent Closing Date Schedule, LSOC has not within the three years prior to such Subsequent Closing Date received any written notice or claim from any governmental body or official or private person to the effect that it is in violation of any term of any applicable law, ordinance, rule or regulation of any governmental authority or any term of any applicable order, judgment or decree of any court, arbitrator or governmental authority (including, without limitation, any law, ordinance, rule, regulation or order relating to environmental or occupational health or safety standards and controls, consumer protection or equal employment practices) relating to any LMSAC Facility set forth on such Subsequent Closing Date Schedule or the use thereof the violation of which would have a material adverse effect upon LMSAC or the Company. The leases and agreements listed on such Subsequent Closing Date Schedule, when assigned and transferred to the Company, will be sufficient on such Subsequent Closing Date to allow continued use of such LMSAC Facility by the Company, in substantially the same manner as used by LSOC prior to such Subsequent Closing Date in connection with its business, without material additional action or payments, except as expressly set forth in the leases and agreements listed in such Subsequent Closing Date Schedule.

(f) Compliance with Laws. Except as set forth in the relevant Subsequent Closing Date Schedule, the property and assets which LMSAC is contributing to the Company and which are listed in the relevant Subsequent Closing Date Schedule (i) were maintained by LMSAC or an Affiliate thereof in all material respects in compliance with all applicable laws and regulations, and (ii) if consisting of one or more contracts with the U.S. government or any agency thereof, were entered into and performed by LMSAC or an Affiliate thereof in compliance with the Truth in Negotiations Act of 1962, as amended, The Service Contract Act of 1965, as amended, The Contract Disputes Act of 1978, as amended, the Federal Acquisition Regulations and any applicable agency supplements thereto, as well as applicable predecessor procurement regulations, Government Cost Accounting Standards, any applicable agreements with a U.S. Government contract cost accounting agency, the Byrd Amendment, Pub. L. No. 101-121, § 319, and the Defense Industrial Security Manual and the Defense Industrial Security Regulation.

(g) Other. Such other representations and warranties as are customarily made upon the transfer of the types of assets and properties LMSAC is contributing to the Company, as may reasonably be requested by RSAC.

Section 11.5. Survival. All representations and warranties made herein shall survive the execution and delivery of this Agreement and for a period of three (3) years after any termination of this Agreement.

ARTICLE XII

CERTAIN COMPANY MATTERS

Section 12.1 Liability to Third Parties. Except as otherwise expressly provided in this Agreement, the debts, obligations and liabilities of the Company, whether arising in contract, tort or otherwise, shall be solely the debts, obligations and liabilities of the Company and no Member shall be obligated personally for any such debt, obligation or liability of the Company solely by reason of being a Member.

Section 12.2 Indemnification by a Member. Subject to Section 12.4, each Member (the "Indemnifying Member") shall indemnify, defend and hold harmless the Company, the other Member, the other Member's Affiliates, and the other Member's and each such Affiliate's employees, officers, directors and agents, and the Company's officers and Advisors (collectively the "Other Indemnified Persons") from and against any and all claims, demands, actions, suits, damages, liabilities, losses, costs and expenses (including reasonable attorneys' fees) (collectively

"Damages"), to the extent caused by, resulting from or arising out of or in connection with any of the following:

(a) the breach of, or misrepresentation contained in, any written representation or warranty made by the Indemnifying Member in this Agreement, in any officer's certificate delivered hereunder or under the Master Agreement, in any written agreement between the Members and the Company with respect to employee and benefit matters as contemplated by Section 4.5, or in conjunction with any contribution or transfer of any property or assets to the Company by the Indemnifying Member;

(b) conditions existing at the time of contribution or transfer of any property or assets to the Company with respect to property or assets so contributed or transferred by the Indemnifying Member;

(c) the breach or default in performance of any covenant or agreement required to be performed by the Indemnifying Member contained in the Agreement or in any written agreement between the Members and the Company with respect to employee and benefit matters as contemplated by Section 4.5; or

(d) any claim, action, suit or proceeding or threat thereof, made or instituted as a result of acts or omissions of the Indemnifying Member or its Affiliates unrelated to the business and operations of the Company or

outside the scope of the Indemnifying Member's rights or authority conferred by this Agreement or any other understanding, agreement or arrangement between the Members and/or the Company and in which the Company, such Member, such Member's Affiliates or such Other Indemnified Persons may be involved or be made a party by reason of such Member being, or having been in the past, a Member.

Section 12.3 Indemnification By the Company.

Subject to Section 12.4, the Company shall indemnify, defend and hold harmless each Member (including any Person who has been but is no longer a Member), each Member's Affiliates and the Other Indemnified Persons from and against all Damages to the extent caused by, resulting from or arising out of or in connection with any of the following:

(a) any claim, action, suit or proceeding or threat thereof, made or instituted in which such Member, such Member's Affiliates or Other Indemnified Persons may be involved or be made a party by reason of such Member being, or having been in the past, a Member, or by reason of any action alleged to have been taken or omitted by such Member in such capacity, or by such Member's Affiliates or Other Indemnified Persons acting on behalf of the Company, if such Member, such Member's Affiliate or Other Indemnified Person was acting in good faith and with reasonable care in what it reasonably believed to be within the scope of its rights or

authority conferred by, and not in contravention of any provision of, this Agreement or any other understanding, agreement or arrangement between or among the Members and the Company, and in the best interests of the Company;

(b) any guarantees or promises of performance of any obligations of the Company; and

(c) any actions or omissions to act by the Company in connection with its business or operations, or the ownership of its assets and properties; provided, however, that nothing in this Section 12.3 shall be construed to require the Company to reimburse, defend, indemnify or hold harmless any Member, its Affiliates, or Other Indemnified Persons with respect to any Damages in any circumstance in which this Agreement requires such Member to reimburse, defend, indemnify or hold harmless any other Member, its Affiliates or Other Indemnified Persons or the Company in respect of such Damages.

Section 12.4 Survival; Limitations; Procedures.

(a) The indemnification obligations contained in Section 12.2 shall survive any termination of this Agreement or the dissolution and wind up of the Company. The indemnification obligations contained in Section 12.3 shall survive any dissolution of the Company until its affairs have been fully wound up and all of its properties and assets distributed in accordance with Section 10.3.

(b) The rights and remedies provided to the Members and the Company in this Agreement are cumulative and non-exclusive and shall not preclude any other right or remedy available to any Member or the Company at law or in equity.

(c) Notwithstanding any other provision hereof, neither the Company nor any Member shall be liable to any other Member or its Affiliates, the Company, or any Other Indemnified Person for special, indirect, punitive or consequential damages, including but not limited to loss of profit.

(d) If a Member or the Company is obligated hereunder to indemnify any other Member, the Company, a Member's Affiliate or any Other Indemnified Person (in any case the "Indemnified Party") from any claim, suit, action or proceeding brought by any other Person (a "Third Party Claim"), such Indemnifying Member or the Company, as the case may be, shall have the right to control the defense and settlement of such Third Party Claim with counsel reasonably acceptable to the Indemnified Party, provided that (i) such Indemnified Party may retain counsel at its expense to assist in the defense and settlement of such Third Party Claim, and (ii) no settlement of any Third Party Claim shall contain terms or provisions requiring the Indemnified Party to take any action or perform any undertaking, or prohibit

or restrain the Indemnified Party from taking any action, without the written consent of the Indemnified Party.

Section 12.5 Third-Party Dealings With Members.

Except as permitted by this Agreement, no Member shall have any right or authority to take any action on behalf of the Company with respect to third parties.

ARTICLE XIII

DEADLOCKS

In the event the Members fail to agree on any issue as to which agreement of the Members is required hereunder and that is material to the operations of the Company, and such deadlock is not resolved within fifteen (15) days following the giving of written notice of the existence of such deadlock by one Member to the other, either Member may request that the Chief Executive Officer of Rockwell and the Chief Executive Officer of LMC seek to resolve such deadlock. Within twenty-one (21) days of the initial request, such persons will meet and attempt to resolve the deadlock. If such persons are unable to resolve the deadlock within sixty (60) days following their initial meeting to consider the deadlock, then, at any time thereafter, so long as the deadlock has not been resolved, either Member may request that the Advisory Board seek to resolve the deadlock. Within twenty-one (21) days of the

initial request, the Advisory Board will meet to attempt to resolve the deadlock by a vote of a majority of the entire Advisory Board, and thereafter the Advisory Board will continue to meet at such times as it deems appropriate until the deadlock is resolved at the earliest practicable date by a vote of a majority of the entire Advisory Board.

ARTICLE XIV

TECHNOLOGY

The Company and the Members shall enter into such written licensing or other written agreements, if any, regarding rights in respect of technology or other intellectual property of the Company or of either Member in respect of the business or operations of the Company at such times and upon such terms as shall be deemed necessary or appropriate by mutual agreement of the Members.

ARTICLE XV

MISCELLANEOUS

Section 15.1 Waivers. The failure at any time of either Member to require performance by the other Member of any responsibility or obligation required by this Agreement shall in no way affect a Member's right to require such performance at any time thereafter, nor shall the waiver by a Member of a breach of any provision of this Agreement by

the other Member constitute a waiver of any other breach of the same or any other provision nor constitute a waiver of the responsibility or obligation itself.

Section 15.2 Amendment. This Agreement may be amended only by an instrument in writing duly executed by the parties hereto.

Section 15.3 Assignability. This Agreement shall be binding upon and inure to the benefit of the successors and permitted assigns of each party hereto. Except as otherwise provided in this Agreement, neither this Agreement nor any right or obligation hereunder may be assigned or delegated in whole or in part to any other Person without the prior written consent of the other Member, and any assignment or attempted assignment in violation of this Agreement shall be null and void.

Section 15.4 Notices. In any case where any notice or other communication is required or permitted to be given hereunder (including, without limitation, any change in the information set forth in this Section 15.4), such notice or communication shall be in writing and (i) personally delivered, (ii) sent by postage prepaid registered or certified mail, return receipt requested, (iii) sent by recognized overnight courier or (iv) transmitted by telecopier, with a copy sent by postage

prepaid registered or certified mail, return receipt requested, as follows:

If to RSAC, to:

Rockwell Space Alliance Company
c/o Rockwell International Corporation
Space Systems Division
12214 Lakewood Boulevard
P.O. Box 7009
Downey, California 90241-7009

Telecopier: (310) 922-5678

Attention: President

With a copy to:

Rockwell International Corporation
2201 Seal Beach Boulevard
Seal Beach, California 90740-8250

Telecopier: (310) 797-5687

Attention: William J. Calise, Jr., Esq.
Senior Vice President, General
Counsel and Secretary

If to LMSAC, to:

[to be provided]

With a copy to:

Lockheed Martin Corporation
6801 Rockledge Drive
Bethesda, Maryland 20817

Telecopier: (301)897-6791

Attention: Frank H. Menaker, Jr., Esq.
Vice President and General
Counsel

the laws of the State of Delaware, without giving effect to the principles of conflict of laws thereof.

Section 15.7 Consent to Jurisdiction. Each Member irrevocably submits to the exclusive jurisdiction of (i) the Courts of the State of Delaware and (ii) the United States District Court for the District of Delaware, for the purposes of any suit, action or other proceeding (including appeals to their respective appellate courts) arising out of this Agreement or any transaction contemplated hereby (and agrees not to commence any action, suit or proceeding relating hereto except in such courts). Each Member irrevocably and unconditionally waives any objection to the laying of venue of any action, suit or proceeding arising out of this Agreement or the transactions contemplated hereby in (i) the Courts of the State of Delaware or (ii) the United States District Court for the District of Delaware, and hereby further irrevocably and unconditionally waives and agrees not to plead or claim in any such court that any such action, suit or proceeding brought in any such court has been brought in an inconvenient forum.

Section 15.8 Headings. The headings of the Articles and Sections in this Agreement are provided for convenience of reference only and shall not be deemed to constitute a part hereof.

Section 15.9 Entire Agreement. This Agreement, together with the Schedules and Exhibits hereto and the agreements and instruments expressly provided for herein, constitutes the entire agreement of the parties with respect to the subject matter hereof and supersedes all prior agreements and understandings, oral and written, between the parties with respect to the subject matter hereof.

Section 15.10 Severability. Should any provision of this Agreement be deemed in contradiction with the laws of any jurisdiction in which it is to be performed or unenforceable for any reason, such provision shall be deemed null and void, but this Agreement shall remain in force in all other respects. Should any provision of this Agreement be or become ineffective because of changes in applicable laws or interpretations thereof or should this Agreement fail to include a provision that is required as a matter of law, the validity of the other provisions of this Agreement shall not be affected thereby. If such circumstances arise, the parties hereto shall negotiate in good faith appropriate modifications to this Agreement to reflect those changes that are required by law.

Section 15.11 Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

Section 15.12 Pronouns and Plurals. All pronouns and variations thereof in this Agreement shall be deemed to refer to the masculine, feminine, neuter, singular or plural, as the identity of any person or persons referred to may require.

Section 15.13 Further Assurances. Each Member shall execute such deeds, assignments, endorsements, evidences of transfer and other instruments and documents and shall give such further assurances as shall be necessary to perform its obligations hereunder. The obligations of the Members set forth in this Section 15.13 shall survive the termination of this Agreement.

Section 15.14 References to Agreement. Numbered or lettered Articles, Sections and subsections herein contained refer to Articles, Sections and subsections of this Agreement unless otherwise expressly stated. Any reference herein to this Agreement shall be deemed to be a reference to such Agreement as the same may be modified, varied, amended or supplemented from time to time by the Members in accordance with the provisions hereof. Unless the context otherwise expressly requires, the words "herein", "hereof" and "hereunder" and other words of similar importance refer to this Agreement as a whole and not to any particular Article, Section or other subdivision.

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed and delivered by their respective officers thereunto duly authorized as of the day and year first above written.

ROCKWELL SPACE ALLIANCE COMPANY

By: /s/ William J. Calise, Jr.
Name: William J. Calise, Jr.
Title: Vice President

LOCKHEED MARTIN SPACE ALLIANCE
COMPANY

By: /s/ Peter B. Teets
Name: Peter B. Teets
Title: Chairman

Schedule 11.1(c)

RSAC Consents and Approvals

None

Schedule 11.3(c)

LMSAC Consents and Approvals

None

[CONFORMED COPY]

GUARANTY

IN CONSIDERATION of the execution and delivery of the Limited Liability Company Operating Agreement (the "Operating Agreement"), dated as of November 22, 1995, by and between Rockwell Space Alliance Company, a Delaware corporation ("RSAC") and an indirect wholly-owned subsidiary of Rockwell International Corporation, a Delaware corporation ("Guarantor"), and Lockheed Martin Space Alliance Company, a Delaware corporation ("LMSAC") and an indirect wholly-owned subsidiary of Lockheed Martin Corporation, a Maryland corporation ("LMC"), and as an inducement to LMSAC to enter into the Operating Agreement and to become a member of the limited liability company governed thereby (the "Company"), Guarantor hereby absolutely and unconditionally guarantees to LMSAC and LMC and their respective successors and permitted assigns the due and punctual payment and performance when and as due of each of the obligations (the "Obligations") of RSAC contained in Article III, Section 7.3, Article VIII, Section 9.2 and Section 12.2 (insofar as it relates to a breach of the foregoing provisions or of a representation or warranty made by RSAC pursuant to Section 11.1 or Section 11.2) of the Operating Agreement. If RSAC shall fail to perform or satisfy any part or all of the

Obligations when due, Guarantor shall perform or satisfy all of such Obligations and indemnify against any losses caused by RSAC's failure to perform such Obligations. The obligations and the liability of Guarantor under this Guaranty are continuing, irrevocable, absolute and unconditional, without regard to the liability of any other person under any and all circumstances and (i) are not conditioned or contingent upon, and are irrespective of, the pursuit by LMSAC or LMC of whatsoever remedies there may be against RSAC (or any other obligor upon the Obligations, any other guarantor or any security for any or all of the Obligations) and (ii) will not be discharged or affected by any circumstances (other than complete satisfaction of the Obligations) that might constitute a legal or equitable discharge of a guarantor or surety. The liability of Guarantor hereunder shall in no way be affected or impaired by any failure, neglect or omission on the part of LMSAC or LMC to realize upon or otherwise enforce the Obligations or by any delay or omission on the part of LMSAC or LMC in exercising any right or power under the Operating Agreement or this Guaranty.

The Guarantor hereby represents and warrants to LMSAC and LMC that this Guaranty constitutes the valid and binding obligation of Guarantor enforceable against Guarantor in accordance with its terms, subject to

applicable bankruptcy, insolvency, reorganization, moratorium and similar laws affecting creditors' rights generally and to general principles of equity.

The terms and provisions hereof shall be binding upon the successors and assigns of Guarantor and shall inure to the benefit of the successors and permitted assigns of LMSAC and LMC; provided, however, that this Guaranty shall terminate if either (i) RSAC transfers its entire interest in the Company in accordance with the terms of the Operating Agreement or (ii) Guarantor transfers all of the outstanding capital stock of RSAC (other than to a Permitted Transferee, as defined in and permitted by the Master Agreement dated as of the date hereof between Guarantor and LMC (the "Master Agreement")) in accordance with the terms of the Master Agreement. This Guaranty shall not be construed as conferring any rights or benefits to or upon any person other than LMSAC and LMC and their respective successors and permitted assigns.

Notwithstanding any other provisions hereof, the Guarantor shall not be liable to LMSAC or LMC for special, indirect, punitive or consequential damages, including but not limited to loss of profit.

This Guaranty shall be governed by and construed in accordance with the internal laws of the State of Delaware, without regard to the conflicts of laws principles

IN WITNESS WHEREOF, Guarantor has caused this
Guaranty to be signed by its duly authorized officer this
22nd day of November, 1995.

ROCKWELL INTERNATIONAL CORPORATION

By /s/ William J. Calise, Jr.
Name: William J. Calise, Jr.
Title: Senior Vice President,
General Counsel and
Secretary

of such State. The Guarantor irrevocably submits to the exclusive jurisdiction of (i) the Courts of the State of Delaware and (ii) the United States District Court for the District of Delaware, for the purposes of any suit, action or other proceeding (including appeals to their respective appellate courts) arising out of this Guaranty (and agrees not to commence any action, suit or proceeding relating hereto except in such courts). The Guarantor irrevocably and unconditionally waives any objection to the laying of venue of any action, suit or proceeding arising out of this Guaranty in (i) the Courts of the State of Delaware or (ii) the United States District Court for the District of Delaware, and hereby further irrevocably and unconditionally waives and agrees not to plead or claim in any such court that any such action, suit or proceeding brought in any such court has been brought in an inconvenient forum.

IN WITNESS WHEREOF, Guarantor has caused this
Guaranty to be signed by its duly authorized officer this
22nd day of November, 1995.

LOCKHEED MARTIN CORPORATION

By /s/ Peter B. Teets
Name: Peter B. Teets
Title: President & Chief Operating
Officer
Information & Technology
Services Sector

Mr. SENSENBRENNER. Mr. Goldin, would you have preferred to go an open competition route rather than the single source contract?

Mr. GOLDIN. I love competition, and this was a very difficult decision. And I have to say that the deliberations were very tough. And wherever possible, I love competition. I think it brings out the best in people. It's the way the American system works best.

Mr. SENSENBRENNER. Is it safe to say that you changed your mind after the evaluation of the Source Evaluation Board on the various expressions of interest that came about as a response to your competitive announcement of August 21st?

Mr. GOLDIN. Well, let me take you back in history.

I have flip-flopped in my mind a number of times, as we were getting going, because of my concern of the issues I talked about.

But Dr. Littles, when we got started in the summer, convinced me the right way to go was to try the route of open competition. And in the process, we set an intermediate point, after we got the inputs from industry, to see where we were and have the Source Evaluation Board make a recommendation.

So in honesty to you, I was on the fence. I wanted competition, but I was concerned that we would go through a process and it would just take time and cost money, so I let the process roll out.

Mr. SENSENBRENNER. Well, as near as I can read what has happened is that on August 21st, you were of a mind to have a competitive bidding procedure, and you called the industry people in.

And then Rockwell and Lockheed-Martin came back some time in September with what amounted to a joint proposal, even though they had not set up the formal joint venture.

And that kind of tied NASA's hands, didn't it?

Mr. GOLDIN. Well, let me say this. They came out with an announcement on July 27th. That was the first official indication we had of that. And I had the folks check the record today.

My recollection was it was during the summer, and Wayne, correct me, if I'm wrong, is it? July 27th is when their announcement came out.

And I was personally frustrated. But given that you have to deal with the world as it's presented to you, we felt we still wanted to attempt to see if it was possible to run a competition, and we wanted to go through an orderly process.

Mr. SENSENBRENNER. Now knowing the way the business is done, and using the Space Station single prime contract with Boeing as an example, hypothetically, if Rockwell and Lockheed-Martin had submitted competitive bidding, would it be safe to assume that the firm that lost the single prime contract would end up being a subcontractor of the firm that won?

Mr. GOLDIN. I think it would have. There were certain things both of them did that caused them to depend on each other.

Mr. SENSENBRENNER. So the answer to my question is, you think is yes.

Mr. GOLDIN. Probably yes.

Mr. SENSENBRENNER. Okay. Do you think that the taxpayers would have saved more money under that type of an arrangement than the non-competitive arrangement which was basically forced upon you by Rockwell and Lockheed-Martin?

Mr. GOLDIN. Maybe. I don't know.

There are some issues in there that give concern to us. Both of them have some very significant roles. And again, we have this overriding concern about maintaining schedule.

So I'd like to separate my comments into two sections. One, looking at the SFOC contract in isolation. And secondly, looking at the total human space flight account and the overall implications to safety.

We have a very tough schedule, as we have discussed in many hearings. We want to hold to that manifest. If that manifest slips, it causes the whole program to slip at the rate of two billion dollars a year.

So Lockheed doesn't know things that Rockwell knows, and Rockwell knows things that Lockheed doesn't know. And as a result, there could have been a schedule slipped if one or the other won the competition.

So in that sense, in that sense—there was even a risk with that—but there would have been competition.

Mr. SENSENBRENNER. I guess the point that I'm driving at is that if we had competition of the big two, the loser became a sub-contractor of the winner, and the taxpayers might have saved money under this type of an arrangement, would not the strengths of both firms have been drawn together in a prime contractor/sub-contractor relationship as well as with this joint venture relationship?

Mr. GOLDIN. Maybe, maybe. And the reason for my concern is, I come back and say, if you look at the SFOC contract in isolation, the apparent win cost might have been lower than what we could negotiate but if, because of the inexperience of one or the other caused the schedules to slip, the actual cost to the taxpayer might have been higher.

Mr. SENSENBRENNER. How much time do you think ended up being saved as a result of going to the non-competitive contract, rather than a competitive contract in terms of getting the act together and getting the shuttle to launch the station components according to the time line which we all want to be held to?

Mr. GOLDIN. I think we had the risk of a schedule slip of as much as a year. And that—no, I don't need that chart. We had the risk of a schedule slip of as much as a year.

Mr. SENSENBRENNER. Well, my time has expired, but I want to get back to this in the second round of questioning.

The gentleman from Texas, Mr. Hall.

Mr. HALL. Thank you, Mr. Chairman.

Of course the main justification for moving to single prime contracts is to reduce costs, and let us talk about that a little bit.

You obviously had a goal of cost reduction, and I'd like to kind of know what cost reduction goal NASA's trying to achieve by moving to single prime contractor and how much that goal was offset, if any, by removing the ingredient of competition?

Mr. GOLDIN. We believe there is a significant savings.

The reason I don't want to state a goal, Mr. Hall, is if the administrator states a specific goal, we're going to get people to respond and try and meet that number. And then we get into the kind of troubles that Dr. Weldon has brought up time and time again about driving people to a specific number on the shuttle.

So I'd like to answer it qualitatively, and say that there are a number of issues, there are a lot of redundancies and overlaps among those contracts, among the contractors, and among the government and the contractors. And that process, we're convinced, could save a very significant amount of money.

Again, I want to come back to the interaction I had with Chairman Sensenbrenner. When we look at this, we look at this not in the context of the isolation of the SFOC contract by itself but the total program.

So if we were to get someone that would write a wonderful proposal that we could accept that proposal, and then they have trouble coming up to speed, making management changes right in the middle of the time that we're developing hardware, and in fact, I would like to go up to the schedule here and show you the events that concerned us.

I'll try and speak loud so you can hear.

But in order to meet a date of December 1997 for the first ISS shuttle launch, we back up into 1995 with a set of tasks from preliminary flight data file, flight design products, cargo integration review in late 1996, joint integrated simulations that occur in 1997, and then you have the shuttle launch here.

So while a contractor's trying to come up to speed, they'll be performing these tasks. And we tried to make a model of each of the contractors separately trying to do this, while we're negotiating a contract. And even up front here, we're trying to compete it, and this was the major problems that we came up with and this was the concern we had, looking at the total program instead of the SFOC contract in isolation.

That is really the force that drove us. And that's why we believe the American taxpayers, in the end, in the broader sense, will save money.

Now we do not intend to sit down with a contractor and have them push NASA around. I want to tell you, we will negotiate in good faith, but I also want to make this commitment to the Committee. If we feel that the American taxpayer is paying more money because of the lack of competition, we will come back to this Committee and say we could not negotiate with the USA Company, and that is a very key factor that I'd like you to keep in mind. We will have our own should-cost, and we will negotiate to that.

Mr. HALL. You actually have a pattern there, because you have the existing Rockwell and Lockheed-Martin contracts, and you had the choice of streamlining those contracts to the maximum extent possible or taking the route you've taken.

So you do have a cost figure there somewhere to compare it with, and I presume you'll be doing that?

Mr. GOLDIN. Yes, sir.

Mr. HALL. Do you have a ceiling on how much you're willing to pay the single prime contractor?

Mr. GOLDIN. Not at this point.

Mr. HALL. You have it in the back of your mind, though? Because you have the existing contracts to bang it against.

Mr. GOLDIN. Yes, sir.

But again, I don't think it would be appropriate to lay these down. I'm very, very concerned about telling people you've got to operate to a number.

Mr. HALL. If you won't give me that number, tell me what will determine that ceiling?

Mr. GOLDIN. Our assessment of the efficiencies that could be involved in consolidating contracts, the efficiencies that should be involved in providing accountability without having different government organizations and different contractor organizations not having responsibility for critical safety issues, and the efficiencies that will accrue when we get the government out of the direct operation of very routine operational activities. Those will be the determining factors.

Mr. HALL. Whatever that target is then, if you're unable to reach an agreement with the Alliance, you're prepared to walk away from it?

Mr. GOLDIN. Yes, sir.

Mr. HALL. And you're contractually prepared to walk away from it?

Mr. GOLDIN. We are prepared to do that, so this is not going to be a love fest.

On the other hand, we have confidence that they'll work with us.

But I'd like to add one other thing, Mr. Hall. I went down to Cape Kennedy and I met with the leaders of the different contractors down there, and they made one plea to me.

And that plea was, don't give us a specific cost target because then what we'll do is we're going to eliminate jobs and eliminate tasks and create safety problems.

And I don't want to feel that I'm not being responsive to you, but I feel that we've got to be in an atmosphere where they will give their best shot of what they think to do, and they should not bid to satisfy some number that NASA has because that'll violate a basic safety concept and the commitment I made to them.

Mr. SENSENBRENNER. The time of the gentleman has expired.

The gentleman from Florida, Dr. Weldon.

Mr. DAVE WELDON. I thank the Chairman.

I guess I'd like to start out by saying that any criticism that I may have about how this came about is in no way to imply that I do not very much support the staff at Kennedy currently working on the Rockwell and the Lockheed contracts. And it was indeed my opinion from the start that in order to maintain safety of shuttle operations, it would probably be best if one or both of those companies remained on the program.

And I do want to thank the Chairman for asking for this hearing, because I think I'm already coming away with a better understanding of how this process evolved in ultimately selecting USA.

I do have a couple of questions I do want to direct your way, Mr. Goldin, and one of them is did you, in the process, when you began all this, did you ask any of those bidders, the other three that you down selected to, if, in their proposal, they were demonstrating an ability to maintain safety and schedule while they went through this competitive process and basically deal with the problem that you brought up here in your chart in terms of these milestones that you have to meet.

Did you ask them if they were going to be able to do that?

Mr. GOLDIN. Yes. We asked them to give us their assessment of how they would handle this transition.

Mr. DAVE WELDON. What kind of response did you get from them?

Mr. GOLDIN. I did not see the detailed response, but I got the input from the SEB.

Mr. DAVE WELDON. What was that?

Mr. GOLDIN. And the sense was that the other contractors, given their experience levels and given their inputs, could not effectively maintain schedule and safety to our level of confidence.

And I believe in the written testimony, I have a detailed list of the questions that we asked them in that solicitation.

Mr. DAVE WELDON. Well, obviously the area of concern that we have here on the Committee is are the interests of the taxpayers sufficiently protected. And that leads me to my next question which is how you will construct a contract to make sure that, you know, the single prime contractor selected, USA, is going to be penalized if they do not meet safety requirements or they do not meet schedule requirements, being that we're bypassing the full and open competitive process.

Mr. GOLDIN. We are going to put clauses in there.

And let me come back to what Dr. Littles testified to. Our number one priority is safety, followed by meeting the manifest, followed by cost in that priority. But you can't pass safety.

So we are going to put in a variety of safety clauses in the contract. We will work with them jointly on metrics. And Dr. Littles submitted a preliminary set of metrics we might consider, but we will openly look at that.

To make sure that it's not just NASA's wisdom, we are going to work with the Aerospace Safety Advisory Board, which we don't even appoint; this is appointed by the Congress, and we're going to ask them to work with us through this process so that we have an outside view, outside of NASA, that is, of do we have the right principles in place in the contract to assure safety.

So I know you've been concerned about having outside oversight of this, and I think the Aerospace Safety Advisory Board is in place. We have asked them, on a continuing basis, to look at it, and we will solicit their help during the development of our position on how to award or punish with fee on the issue of safety.

Mr. DAVE WELDON. Now that you've made this decision, are you going to be getting, as you proceed over the upcoming months, USA involved in establishing the management structure for ultimately implementing the contract, as opposed to you at NASA dictating how the structure ought to be constructed? Are you going to be working with them in order at least to meet the budget targets that we're talking about?

Mr. GOLDIN. First, let me say, we will not talk to them until we have concurrence under the determination and findings. There will be no discussion.

After we have concurrence on the determination and finding, we will begin discussion on the statement of work in the RFP, just to get their comments.

We're going to state a position in that, and we'll try and factor in some of their thoughts. We're going to send out a proposal, an RFP, and we're going to ask for a formal proposal. If they disagree with the approach that we have taken in the RFP, we will say, if you disagree, tell us why you disagree and formally state your area of disagreement and tell us how you could do it better.

And then we will see if we agree or disagree with them.

It will be a very formal process.

I want you to understand this is not going to be a set of informal discussions among people. It will be a very disciplined proposal approach and we will treat it as though we had a competitive competition. So there will be formal discussions and that will form the basis, their proposal and our comments will form the basis for negotiations.

Mr. DAVE WELDON. Do you think there would have been any benefit from receiving competing proposals to achieve safety improvements under the single prime?

Mr. GOLDIN. Given—let me say this. If we ran a competition, and weren't constrained by bringing the prime contractor on board at least a year before the first launch of the shuttle, maybe. But given the fact that we have to launch that Space Station element in December of 1997, I feel it would take a couple of years for the other contractors, however experienced they were, to work with the shuttle team to really come up to speed to be able to make the contributions they'd have to make.

So given the time constraints we had, no, I don't think we would have got a safer system.

Mr. DAVE WELDON. Thank you.

Mr. SENSENBRENNER. The gentleman's time has expired.

The gentleman from California, Mr. Brown.

Mr. BROWN. Thank you very much, Mr. Chairman.

May I just offer a comment to the other members of the subcommittee that one of the values of this hearing of course is the opportunity it gives us all, during a period which is critical to the space program and to the transitions taking place, to understand what is driving some of these things so that next year, when we come back, we can remind Mr. Goldin, or two or three years from now, that this is what he said at a certain time, and why can't we expect that he has achieved the goals that he set forth.

In other words, the continuity of our own Committee operations are very important to this process.

Mr. Goldin, your assumptions about a loss of continuity if you were to compete the program are obviously based on the assumption that another set of contractors would win the competition and then there would be a transitional period.

Why is it that you think that another set of contractors could come in and bid lower than the two contractors now doing the work and who should be the most conversant with the opportunities for cost savings and for maintaining the schedule properly?

Mr. GOLDIN. You never know what's going to happen, but it was our assessment that given the amount of time we had, the other contractors would have a very difficult time. But let's say they put in a credible proposal. We would have to consider it. It would have to be considered. We just couldn't throw it out of hand.

And if we were to select one of those contractors, we would be very concerned about this schedule risk. That was the issue.

Mr. BROWN. Well, the slippage would not be due to the competitive process, it would be due to the transition to another contractor who bid lower than the two very competent contractors already on the job.

I'm trying to analyze why you thought they couldn't compete successfully.

Mr. GOLDIN. Well, there are a number of other factors, and let me just lay a few of them on the table.

In retrospect, after we got through this process, we thought that if there was a competitive process, that it could slip beyond September 1996, and if it wasn't due to the proposal process—let me cite a figure to you—NASA I believe has had 204 protests after we've awarded a contract. Two of them have been sustained.

On a program this large, in my mind, given the track record that we have, we could never get out of the starter's box. Someone was going to protest, and then we would be another six months, and it would further complicate.

Now I don't want to tell the contractors what to do or what not to do, but at a certain point in time, we have to say, we're going to hold to the schedule, and this is the obligation I have as Administrator. So there are a whole variety of issues that would come up.

The other part of the problem is that it would be very difficult to have communication during this critical process. They'll need information from Rockwell and Lockheed, and that information transfer would be stifled and that would further cause complications and I'm afraid would cause it to take more time.

Mr. BROWN. Well, I think we can all agree that if you had to make a major change in contractors, it would take more time.

I'm trying to probe why you think the obviously best-qualified contractors, by virtue of the fact they're doing the job, would lose on a bid process.

Mr. GOLDIN. As I said in my opening statement, the easy thing for us to do was to let nature take its course and go let a competition happen.

Mr. BROWN. Well—

Mr. GOLDIN. No, but let me finish. That would have been the case, and we could have had some stalking horses. And let me theorize that some companies might have wanted to satisfy NASA by being a stalking horse and putting in a proposal. That could have happened.

I don't know what could happen, but I do know that time would pass by, we would be at an arm's length distance for a year, and let's say USA were to win. We wouldn't be able to talk to them for a year while we have a whole series of events going on.

And that again was another factor that was in our consideration. Now when you start with a clean sheet of paper, you don't have these issues and concerns. But these are the pragmatic issues, and I didn't want to sit before this Committee a year from now and say, oh my god, we're slipping the space station. I made a commitment to you that we would not slip that schedule, and I didn't want us to have an excuse.

Mr. BROWN. Well, Mr. Goldin, I'm inclined to support your position here, but I don't think you're justifying it in the best possible way. And part of our job is to be able to justify it in the best possible way.

And this is why I'm asking these kinds of questions.

Mr. SENSENBRENNER. The gentleman's time has expired.

The gentleman from Indiana, Mr. Roemer.

Mr. ROEMER. Thank you, Mr. Chairman.

Good morning, Mr. Goldin.

I want to get back to your comment about, you know, you said in your opening statement that you love competition, yet, with the Space Station, you went to Boeing for the prime contract, single source.

You went in this contract without competition on the Space Shuttle.

Seems like they're two very different instances. In the first instance, with the Space Station, it appears that you may be able to deliver with a developmental project that's going to be developed in a couple of years, that you can negotiate with them, that the leverage is on your side. That if things break down, you can always then try to get a better price or reopen negotiations.

It seems like, and you've almost admitted that what has driven your decision to go to no competition this time has been the Space Station. And that they have the leverage now. You don't have the leverage at this point to try to get the best cost.

I guess apart from that, many people on this Committee are trying to stress to you that the numbers should not sacrifice safety and that we want you to continue to put safety for the Space Shuttle at the highest priority, and to develop the best metrics and best measurements to do that.

Given that, the Space Station contract was about five months over the deadline. You expect to meet the deadline with this particular negotiation?

Mr. GOLDIN. Yes, we do.

Mr. ROEMER. And how long will that be?

Mr. GOLDIN. We're shooting for September of 1996 and if these negotiations drag on a significant amount of time, that will be a factor in breaking them off.

Now again I want to come back to you and say, we do have leverage. We do have leverage.

Mr. ROEMER. But you just said you don't want to delay the Space Station, which would increase the cost of the Space Station and cause you problems for the ceiling that Congress has put on the cost of the Space Station in annual appropriations.

Mr. GOLDIN. That is correct—

Mr. ROEMER. That's a lot of leverage.

Mr. GOLDIN. [continuing] —because the shuttle takes up the Space Station. That's a lot of leverage but the fact of the matter is, if they don't perform in the negotiations, we have the option of breaking off the negotiations and going a different way.

Mr. ROEMER. In the event of a space shuttle being lost or damaged, what's the contractor's liability?

And secondly, how would a decision be made to resume flights? Who makes that decision? And what kind of participation would NASA have in that decision?

Mr. GOLDIN. First, as I said, we have not yet come up with the terms and conditions that we're recommending for the fee provisions of that contract.

And keep in mind, this is the first step in privatization.

We're outsourcing work that the government would normally do as part of this process. The contractor does not have ownership of the shuttle. The ownership of the shuttle remains with the United States Government, so we're talking about a cost-type contract and we're talking about the fee associated with it.

We will consult with the Advisory Board as to appropriate provisions in these terms and conditions to assure we have maximum focus on safety. So that is the gate through which we will pass before we go out with the RFP.

Mr. ROEMER. But you can't be any more definite in terms of the liability and risk at this point?

Mr. GOLDIN. Only to say that there will be significant penalties for significant problems with the shuttle.

Mr. ROEMER. I would hope you would continue to be in touch with the Committee as your position evolves on this.

Mr. GOLDIN. We shall do that.

Mr. ROEMER. Mr. Paul Johnston, Chairman of the Aerospace Safety Advisory Panel, has said in testimony that the shuttle is going to need to be redesigned. Components that are no longer manufactured are going to need to be repaired and so forth.

Under a single prime contract, will the contractor assume the task of procuring hardware such as shuttle external tank and the solid rocket boosters?

Mr. GOLDIN. We have a phased approach, again to do things very deliberately to assure continuity and safety.

In the first phase, we're going to just consolidate the contracts that both Rockwell and Lockheed-Martin have.

In the second phase, we will then consolidate those routine operations contracts that they do not have that other contractors have.

In the process we, NASA, will be responsible for some of the significant developments that are going on right now that the head of the Aerospace Safety Advisory Board had indicated we ought to be doing. That will be under NASA control.

As a development is complete and it goes into normal production, we will then transition those contracts to the shuttle prime contractor.

Should new developments come up as we go along, NASA will maintain the responsibility for the development and then, when it's in a routine production phase and we feel it's appropriate to safely transmit it to the prime contractor, we shall do that.

So again I want to come back and assure you, we have heard what this Committee said and we're going to be very deliberate in how we approach this process.

Mr. SENSENBRENNER. The gentleman's time has expired.

Mr. ROEMER. Mr. Chairman, could I just say, I have some other questions I want to submit for written answers.

Is that appropriate?

Mr. SENSENBRENNER. Without objection, the gentleman can submit his remaining questions in writing, which we would ask Mr. Goldin to respond to, or he can wait around for the second round of questions, because I have a few too.

Mr. ROEMER. Can I make one further request of the Chairman?

Could I just ask the Administrator if we could get copies of the Statement of Work and the RFP when it's appropriate?

Mr. GOLDIN. Yes, sir.

Mr. ROEMER. Thank you, Mr. Chairman.

Mr. SENSENBRENNER. The gentleman from Kansas, Mr. Tiahrt.

Mr. TIAHRT. Thank you, Mr. Chairman.

Mr. Goldin.

It's a concern of mine about when you go sole source, I guess you try to avoid some of the protests that come often when you have a competitive bid, two compete against each other, one is selected, the other one feels that they were in some way not evaluated properly, or for some reason file a protest.

Do you think that your current plan is going to save us money by avoiding the protest procedures that normally occur?

Mr. GOLDIN. It is a pretty high possibility. I just recited the protests that we have received. According to our procurement head, we have received 204 protests over the last five years, two of which have been sustained by the GAO.

Mr. TIAHRT. So there has been a lot of wasted effort?

Mr. GOLDIN. I would say that.

Mr. TIAHRT. When you go to a sole source, though, there is some concern that you're going to get the best value.

I think you have confidence that you're going to get the best value through this means or you wouldn't have pursued it.

Could you kind of give me an idea of how you think you're going—how we're going to hold contractors accountable for doing the best job?

Mr. GOLDIN. I believe we're going to get best overall value to the government because we're not just looking at best value for this contract but we're looking for best value for the human space flight program.

And we believe that the USA Company has the really best knowledge to do this. They have a deep understanding of the operations involved. They are working on 69 percent of the total contracting dollars right now.

They have been very cooperative over the last few years, as we've strove to get efficiencies. They have not been reluctant to work with us. They have been very conscious about safety.

So looking at the positive aspects, that's the issue.

But let me come back and assure you that we will not drive the cost, and if we're dissatisfied with the safety approach, if we're dissatisfied that they're not giving us value on this shuttle operations contract, we will break off negotiations, and we will have to reprogram NASA funds to make up for the difference in the savings we thought we'd have.

So we're not going to be in a position to say we will have to do whatever they tell us to do and be held under the gun. Now that isn't to say we don't think we could work with them, but I want you to understand that we have an ability to break off the negotia-

tions if we're dissatisfied. We don't desperately need to do this, but it will cost us more and we'll have to deal with it in our overall budget process.

Mr. TIAHRT. You have quite a history in this part of the program of what costs are, so you could probably project those in a reasonable fashion, which would help you during the negotiations.

In your efforts to streamline, I hope that you give the contractors room to work so that they aren't burdened by a lot of people looking over their shoulder. I think that's been one of the problems.

If I look at, for example, when we buy a commercial aircraft in this country, United Airlines has one guy in Seattle to accept the 747.

When Air Force One came through the pipeline, they had somewhere around 500 government people accepting the same airframe basically. In other words, there were some differences as far as security and communications but we have a tendency I think in this government to overburden, and I think that through your streamline process and perhaps this method in contract are avoiding some of that over bearing oversight.

Mr. GOLDIN. We agree with you. And in fact, in a number of the critical contracts we have now, Dr. Littles pointed out last time, some contracts we have hundreds of people with direct day to day oversight, and in other places on very high technology issues for very large chunks of the program, like the shuttle main engine, we only have ten people in the plant out at Rockwell where in other places we have hundreds and hundreds of people.

So this is the approach we intend to pursue, and the other benefit of this process is, with the less oversight, we're giving more accountability and responsibility to the contractors, and therefore we will be able to downsize the civil service work force and that is a factor in the savings that we're counting on.

Mr. TIAHRT. Well good luck, and God speed.

Thank you, Mr. Chairman.

Mr. SENSENBRENNER. The time of the gentleman has expired.

The gentleman from Alabama, Mr. Cramer.

Mr. CRAMER. Thank you, Mr. Chairman.

Welcome, Mr. Goldin, one more time.

Very quickly, the Space Shuttle program of course has been a vital to the Space Program, particularly the Space Station. And Marshall Space Flight Center of course plays a critical role in the program.

We're today talking to you a good bit about costs, cost saving. That's important. Safety is of course more important. So those are two themes that I want to point out are important.

But I would like you to talk to us a bit about the transition into this contract.

Will there be a downsizing and restructuring phase?

I assume that NASA will manage that.

What will be the job impact as we make the transition into this contract?

Mr. GOLDIN. We're going to do this in a phased manner, and Dr. Littles had talked about this. But let me summarize some of the things we're looking at.

We intend to keep—first of all, we don't know the final and exact numbers of how many contractors and how many civil servants until we jointly negotiate a contract that looks at all the tasks, because the contractors may have some very significant ideas that we haven't considered yet.

When we come to agreement on all the tasks, and how we're going to improve, equal or improve safety, then we'll be having a transition that we'll execute.

We're preparing a preliminary transition plan which should be available early next year, but we will have to update that plan depending upon the negotiations of the contract.

We are going to seek the oversight of the Aerospace Safety Advisory Board before we actually execute these activities.

And again, I think Dr. Weldon has been very interested in seeing that there's some oversight involved, and we're committed to doing that.

And then we intend to keep the government employees that eventually will come off the contract on board to train the contractor. So during that transition phase, we're going to have quite a few people on, but we have to have a smooth transition.

We will be relying on our Safety and Mission Assurance Organization and our Engineering Organization to put some points in the process where we can test and see have we gotten to a stable condition, a robust condition on safety and operations, and could we now begin the phase down of the employees. So there will be checkpoints along the way to establish we're doing this in an appropriate and a deliberate manner.

Mr. CRAMER. As you do that, would you anticipate any revised roles or missions for the various space centers that are involved in this already?

Mr. GOLDIN. At the present time, we don't see it. We just don't see it.

We will wait and see what the contractors have to say because they will be motivated to give us the safest system at the lowest possible cost, so we'll have to see what they say.

I will be surprised to see any change in the roles and responsibilities of the centers.

Mr. CRAMER. Do you have a formal statement of work for this contract yet?

Mr. GOLDIN. It should be available early next year? December 7th.

Mr. CRAMER. December 7th, within a couple weeks.

Mr. GOLDIN. There'll be a draft available and we will share this with the Committee.

Mr. CRAMER. How long do you expect this contract to run once it's negotiated?

And what options for renewal will there be?

Mr. GOLDIN. We haven't finalized, but the first phase of the contract will probably be through completion of Space Station assembly, and then there will be options, one or two options.

So overall, the contract, the first phase will probably be on the order of five years, and overall it would be ten years. But there would be an option after five or six years, and it would give us

plenty of time to make a decision to see if this is the right approach.

And if we decided to recompetete this contract, what we would do, a few years before the point of executing the option, we could and we would bring on a number of other potential competitors through open solicitation, and give them a chance to really come up to speed. And then we could have a real bona fide competition at that point in time.

But we would reserve that option until a few years before the option would be executed.

Mr. CRAMER. With regard to the Space Station prime contract, I believe there was a drag factor as Boeing negotiated with subcontractors.

Can you compare this process with that?

Mr. GOLDIN. That was a development contract. This is an operational contract. And we have a very good knowledge of this.

I don't think we'll have that same drag factor. However, I think we may have a circumstance develop with some of the contractors may refuse to accept subrogation to a lower level. And we may have to terminate some of those contracts for convenience, and that is a possibility.

Mr. CRAMER. I yield back my time.

Thank you, Mr. Chairman.

Mr. SENSENBRENNER. The gentleman from Florida, Mr. Foley.

Mr. FOLEY. Yes, thank you very much, and I apologize for not being here.

But I understand for the record, July 27th was the first you knew about the arrangement between the parties?

Mr. GOLDIN. Yes, they made a public statement.

Mr. FOLEY. Did you personally have any conversation with Rockwell or Lockheed-Martin employees concerning formulation of such an alliance prior to that date?

Mr. GOLDIN. No, I did not.

Mr. FOLEY. Did you have any conversations with other NASA officials concerning the formation of the Lockheed-Rockwell alliance prior to July 27th?

Mr. GOLDIN. Well people came in and speculated that it might happen, but I gave no direction to anyone encouraging it or discouraging it. I felt it was inappropriate for NASA to tell the contractors what to do.

Mr. FOLEY. Did you feel anyone else in NASA's chain of command had participated in any way?

Mr. GOLDIN. None to my knowledge.

Mr. FOLEY. Did NASA tell either Lockheed-Martin or Rockwell that it could sole-source the project at any point prior to that date, July 27th?

Mr. GOLDIN. Not to my knowledge. But I'll tell you what I was told this morning, in this morning's meeting, and I'll tell you of a conversation I had with the CEO of what was then Lockheed.

Before my arrival at NASA, I was told that NASA had encouraged Lockheed and Rockwell to try and work together to consolidate things.

Soon after I became NASA Administrator, I had a visit from the chief executive officer of Lockheed, who indicated to me his tremen-

dous displeasure with the pressures being brought on by that implied pressure from NASA, and he told me Lockheed competed very, very hard and won that shuttle processing contract at the Cape, and he felt that it was inappropriate for NASA to get in the middle of it.

And I told him I was not going to play a role with that regard.

Now since that time, if NASA employees have talked to them, I'm unaware of it, but I couldn't certify to you today that no conversations occurred.

Mr. FOLEY. When did you first hear from NASA officials about the potential alliance?

Mr. GOLDIN. I know I read about it in the media. That's my recollection. And I would just guess within a month or two of that time.

Mr. FOLEY. Because it would seem there'd be a lot of press inquiries as far as, you know, the rumors on Wall Street, the rumors going back and forth about potential business contracts, there would be some, you know, pressing by the media of, you know, what do you think, or are you encouraging this. Are the NASA officials participating in the dialogue? Is it something the government wants?

Mr. GOLDIN. There's no, we had no vested interest in it forming or not forming. I think it would be very inappropriate for us to do that, and I could just speak for myself. I've told you everything I've heard.

Mr. FOLEY. I yield back.

Mr. SENSENBRENNER. The gentleman from Texas, Mr. Stockman.

Mr. STOCKMAN. Thank you.

Thank you for coming before our Committee. I appreciate it.

I was just curious and have one question following up on that. Is if I was in your shoes and I heard about that some kind of arrangement, did your curiosity peak, and did you probe and try to find out any more about it?

I mean, being the Administrator, it seems like if you read about it in papers and stuff, you'd want to know a little bit more about it, wouldn't you?

Or at least tip off the Chairman of the Committee that something was going on?

Mr. GOLDIN. I want to tell you, I have so many things that I've got to concern myself with—

Mr. STOCKMAN. Yeah, but I mean, that's a pretty big thing. I mean, so you're saying no?

Mr. SENSENBRENNER. If the gentleman will yield, I was tipped off at that time. Mr. Goldin didn't have to spend his time tipping me off.

Mr. STOCKMAN. Oh, okay.

Mr. Chairman, I wish you'd tipped me off.

There was a memo sent out by the President, referring to House Republicans holding the Federal employees hostage.

Are you aware of that memo?

Mr. GOLDIN. No.

Mr. STOCKMAN. You're not?

Is it a policy that the President can directly send memos and bypass you?

Mr. GOLDIN. I don't know what you're referring to, so.

Mr. STOCKMAN. Well, my wife, as you know, works at NASA and it was a memo which I consider very denigrating to me personally and which every Federal employee received a memo.

In the memo, the President indicates that we held him hostage, and I personally want to tell you that I find that very offensive, and many of the people at work for the Federal Government found it very offensive, and we received many calls on it.

And so if you see the President, I think that we should keep politics out of the work place of Federal employees and please pass it along that we are not very appreciative of that memo that was sent out. I thought it was highly political and inaccurate, especially at a time when a leader of this world was assassinated, to insinuate the Republicans are doing similar to what extremists did over in Israel, and it was very disturbing.

And I'd like to submit that, if I could, Mr. Chairman, the memo for the record.

Mr. SENSENBRENNER. Without objection.

[The following information was received for the record:]

Open Letter to Federal Employees
from
President Clinton and Vice President Gore

We are proud of the people who work for the federal government. Any Fortune 100 company would be lucky to have such a work force. Your work makes all Americans more safe, free, and prosperous. We are glad you are all back on the job.

We know it hasn't been easy for you, wondering when and if you would get your next pay check. And many of you had to bear the indignity of being called "non-essential," — some by government critics, some even by your own supervisors. Calling furloughed workers non-essential is deeply offensive and just plain wrong. The law forced us to furlough 800,000 workers whose jobs were not of an emergency nature. The law says nothing about "essential."

No one could say that medical research is non-essential. Or helping Americans go to college. Or rehabilitating a million disabled Americans. Or supporting the widows and orphans of veterans. Or keeping our drinking water safe. Or recruiting new volunteers for the armed forces. Or any of the long list of essential government activities that had to be temporarily suspended. In the short term, they were not emergencies, so the law prohibited them. But they remain clearly essential.

You all know that the law under which most of the government is operating expires on December 15th, and the debate that led to the November shut down is not over. We can't promise you that your jobs and your lives won't be interrupted again. Too much is at stake for America. If you are held hostage again, we know you would not want us to forfeit the nation's future as ransom.

So, until this issue is settled the way we settle great issues in a democracy — through peaceful debate and compromise — you remain good people caught in what Churchill called "the worst system of government devised by the wit of man, except for all the others." And when it is settled, it is you federal workers who will once again carry out the will of the people, who will once again make it possible for America to be the winner. We salute you, and we thank you.

(signed)
Bill Clinton

(signed)
Al Gore

November 22, 1995

Mr. STOCKMAN. Thank you.

I have another question regarding, there's a lot of numbers being tossed around, about how many jobs are going to be lost either in Florida or Texas.

Has USA given you any indication of how many they thought or think may be lost?

Mr. GOLDIN. I can only tell you what I read in the press. USA claims that they'll be able to reduce the costs by a billion dollars a year below what we've already done.

We don't know how they could do that.

As I said before you came in, we are not going to enter into any formal discussions with USA until the subcommittee approves the determination and finding, or concurs with it. And at that time, we'll sit down and talk to them and have open discussions.

So we are not going to just accept what's told to us. We're going to go through each and every issue. We're going to validate that we're going to maintain safety, we're going to maintain the manifest schedule, we're going to do the right things, we're going to have an orderly transition.

We think they have their heart in the right place, but we'll have to see now the negotiation process will proceed.

Mr. STOCKMAN. I know I'm going to take some heat back in the district for this, but I think that your work in doing that is to be commended. I know you're in a difficult position and I know it's going to be difficult achieving that.

Do you think that there's going to be problems regarding the shuttle and station operations overlapping at all in terms of, you know, what pie are they getting?

Because I know at some point, you're going to see the operations of both station and shuttle get closer and closer together as we get closer to launching the space station.

Mr. GOLDIN. There is one significant element in the shuttle operations contract, and that's a contract that is presently held by Rockwell and managed by NASA out at JSC.

We, in our process to streamline the program,—well, let me go back in time. Rockwell, a few years ago, won the station operations contract competitively. That was a competitive win on their part.

And then we saw we had two control rooms, one for the station and one for the shuttle, both involved with Rockwell. We made a decision to consolidate down to one mission control room. And in the process, we saved nonrecurring \$200 million and also about \$50 million a year in that process.

That represents, and we have, could you put the pie chart back up there? On the station, that one.

On this chart—and this is in my written testimony, it's Attachment Six—this shows what would be available for competition on the space station in the year 2002 when construction is complete.

And that first white wedge in the upper right between about 1:00 and 2:30 is about 14 percent of the overall contract, and that represents the work they do in crew training, in operating the mission control center.

Now if we wanted that competed, we'd have to compete the whole shuttle operations contract.

Mr. STOCKMAN. Do you think that you should then require—

Mr. SENSENBRENNER. The gentleman's time has expired. The gavel has been equally applied to everybody including the Chairman.

Mr. Goldin, I'd like to ask some more questions relative to the joint venture agreement.

In your written testimony, you stated that both the sole source and competitive award contracts would be made in September of 1996.

Is that correct?

Mr. GOLDIN. That is correct.

Mr. SENSENBRENNER. Then, in your oral testimony, you stated that if you went to the competitive bid route, and you awarded it to someone other than the United Space Alliance, there would be a significant schedule slippage which would result in cost overruns in the shuttle.

Did I hear you correctly on that too?

Mr. GOLDIN. There could be. I didn't say that there would be. I think I said there could be, and that was a concern. We would drive to the same date, but the risk factor with a new contractor would be higher in terms of completing the negotiations by that date.

Mr. SENSENBRENNER. Now since 69 percent of the dollar amount and 83 percent of the shuttle operations contracts are awarded either to Lockheed-Martin or to Rockwell, is it safe to assume that the institutional memory and the employee expertise is kind of monopolized by the two firms represented in the Alliance?

Mr. GOLDIN. I would say that 69 percent is a very large share and they have a lot of corporate memory, yes, sir.

Mr. SENSENBRENNER. Don't you think that the formation of this Alliance kind of boxed you in?

Mr. GOLDIN. It certainly took some flexibility away.

Mr. SENSENBRENNER. Okay. That I think expresses it in some different words than I did.

I am concerned that, given this history, and the Alliance being formed just before the August 21st meeting, that the Federal Trade Commission will have some bells and whistles that will go off relative to this conglomeration.

Have you talked to the Federal Trade Commission and do you think that anything they could do would significantly retard the schedule that you're talking about?

Mr. GOLDIN. I have not personally talked to them, but some members of our legal staff have met with them and answered their questions.

I want to say that we are not a regulatory agency, and we are prepared to abide with whatever decisions the FTC comes up with.

We believe we can work with Rockwell Lockheed-Martin and have a successful negotiation. We believe they're very, very strong. We think they could do the job.

Mr. SENSENBRENNER. Well, obviously having 69 percent and 83 percent of the two ways that you measure the contracts for the existing shuttle operation, they have been doing the job and they have been doing the job quite well. But it certainly does reduce the type of competition either between Rockwell and Lockheed-Martin

or against those two firms from some other firm in terms of being able to do a better job.

Isn't that correct?

Mr. GOLDIN. I can't get into their minds to see what they decided to do, when they decided to make this Alliance. I like to always look at the positive side and say that they saw an ability to help the U.S. Government do the job better, and they felt they had a better idea, a better widget to go make it happen.

Mr. SENSENBRENNER. What types of deadlines have you set, relative to the negotiations of the various facets of this contract so that if it does fall apart, and you have to go to another plan, as you have said repeatedly in this hearing, you know, when are the milestones when you would have to make that decision, as you go in the process of negotiating?

Mr. GOLDIN. My recollection is that we will have the formal RFP out some time in January, and the proposals in by April.

Let me just validate that with Wayne.

[Discussion off the record.]

Mr. GOLDIN. In March. I stand corrected. And then we will evaluate those proposals and go through a very logical process, and if we see an impasse developing, we will consult with this Committee.

Mr. SENSENBRENNER. Thank you very much.

I am done with my questions.

Are there any other members of the Committee that have any questions?

The gentleman from Texas, Mr. Stockman, is recognized for five minutes.

Mr. STOCKMAN. Thank you, Mr. Chairman.

I just want to finish up the question that you didn't get a chance to answer.

Was did you think it would be appropriate then to require USA to sign a no-compete clause on the space station operations if there is some overlap, or how do you feel about that?

Mr. GOLDIN. I feel confident—first I'd like to say, I believe in wide open competition. You know, I come from 25 years in industry, and every job that my company had, we competed for.

I'd like to see wide open competition. I think it's the best thing for this country.

In some circumstances where you get best value, you have a specific set of problems, we have it now. But I think it falls on NASA's shoulders to assure that over the five or six years or seven years we have before the station is through assembly, we ought to be bringing other companies up to speed to have a wide open competition, and that will be best for this country, and that's I can't commit future administrators, but I will certainly, so long as I'm here, and try and leave that legacy within the organization to assure that we bring other companies up to speed so at that point in time, we would have a real wide open competition.

Mr. STOCKMAN. Yes, I think you hit the nail on the head, that if we end up, if USA becomes the only company able to supply America's space needs, then we fall into a danger where anytime there's a monopoly, the costs then start escalating at a phenomenal rate.

And my concern is just as you see consolidation in different industries, and particularly in the defense and space industries, that we're seeing less and less competition out there in the market. And my concern is there's dwindling competition, you may end up, ironically end up like where we had Ma Bell, where we end up suing to break it into multiple companies.

Mr. GOLDIN. I think this Committee should hold NASA accountable for assuring that in the next round, there will be wide open competition, and we should be taking steps early on, not at the last minute.

Mr. STOCKMAN. But you see what I'm saying though is we're coalescing. I mean, trying to keep track of all the names now, Martin Lockheed, I mean, they all pretty soon will be just one long name of one company.

Mr. GOLDIN. By the way, this is happening in corporate America, and I think the Washington Post ran a very, very good article about this very large consolidation taking place in the commercial world, just like in aerospace. And the nation is going to have to face this in the broader sense, and I think we, NASA, are right on the cutting edge. And you rightfully pointed out we have to be very, very aware of it.

And I will commit to this Committee that we will have an appropriate plan to assure competition in the future.

Mr. SENSENBRENNER. Well, I will invite Mr. Stockman to join us on the Judiciary Committee because that's in the jurisdiction of that Committee.

The gentleman from Texas, Mr. Hall.

Mr. HALL. Thank you, Mr. Chairman.

I just wanted to make one statement to Mr. Goldin. And that is that we've called you here to testify and the telephone works both ways.

If you have problems, I think you know to call this Chairman and assemble this group.

Back during I think the Vietnam, maybe toward the end of the Korean War, I ran a company that did government contracts, and we extruded landing maps I believe that were used during that war.

And we have a provision in our contract where if we produced and we were more efficient, or we'd been a little over-reaching or we, being the low bidder, we still had a substantial profit position in it that the government required us to renegotiate.

And I wonder, I think you have Ed Frankle behind you there, very capable counsel.

Are those clauses still in these contracts?

Mr. FRANKLE. Mr. Hall, there are all sorts of clauses, which we're considering—

Mr. SENSENBRENNER. Mr. Frankle, Mr. Frankle, you have not been sworn in, so if you would like to answer directly, I think I better swear you in.

Mr. HALL. He's a fellow lawyer. I don't believe he'd tell anything that wasn't true.

[Laughter.]

Whereupon, Edward Frankle was called as a witness herein, and having been duly sworn, testified before the Subcommittee as follows:

TESTIMONY OF EDWARD FRANKLE

Mr. HALL. I didn't mean to cause an uproar. I just wonder if renegotiation is one of the tools that you use in these contracts? If that's still a part of government contracts. I had to renegotiate several times.

Mr. FRANKLE. The express renegotiation clauses I don't believe still are used, and the renegotiation board's gone away. We do have and are intending to use some incentive clauses and there are some fairly significant penalty clauses in case things go awry, which I think essentially would serve many of the same things.

Mr. HALL. So it's a unique situation. Obviously, we're going to save time, and the question's whether or not we're saving money. That might be a tool for you to look at.

I yield back my time, and I thank you, Ed.

Mr. SENSENBRENNER. Mr. Frankle, while you're there, can I ask you when you found out about this Alliance? Mr. Goldin was talking about July 27th.

Did you find out on a different day, or what?

Mr. FRANKLE. I certainly did not find out before July 27th. The Alliance itself just was formed, I mean, there was an agreement. On July 27th, there was actually a notice of an agreement of intent.

I heard about it after that date.

Mr. SENSENBRENNER. Okay. Thank you very much.

If there are no further questions, the subcommittee meeting is adjourned. And thank you for coming, Mr. Goldin.

Mr. GOLDIN. Thank you.

[Whereupon, at 11:20 a.m., Thursday, November 30, 1995, the subcommittee was adjourned.]

[The following material was received for the record:]

Testimony of the United Space Alliance
to the House Science Committee
Space & Aeronautics Subcommittee

Mr. Chairman and Members of the Subcommittee, we are pleased to have this opportunity to submit a statement concerning NASA's proposal to negotiate a Space Flight Operations Contract with the Rockwell-Lockheed Martin joint venture, United Space Alliance (USA).

We commend the Chairman for his efforts in holding a hearing on this important matter and for his support of the goal of transforming the management of the Shuttle program in a manner that preserves safety, supports mission requirements, and reduces costs.

Our statement is designed to review the history of Rockwell and Lockheed Martin's involvement in the Shuttle prime contract concept, our interest in forming a joint venture, and the benefits of the United Space Alliance initiative to our nation's human space flight program.

History of Rockwell and Lockheed Martin Involvement in "Shuttle Prime"

Beginning in late 1990, NASA asked the major Shuttle contractors to assist them in developing methods for reducing the cost of the Shuttle program and enhancing safety. Rockwell and Lockheed independently recommended to NASA that consolidation of Shuttle work could produce significant cost savings through elimination of overlap and duplication and streamlining of processes. Lockheed recommended consolidation under two prime contractors, while Rockwell recommended consolidation under a single Shuttle prime contractor.

Lockheed, Martin Marietta and Rockwell participated in NASA's "Zero-Base Review" and the "Space Shuttle Management Independent Review Team," led by Dr. Chris Kraft. When the Kraft Committee issued its final report in February 1995, it recommended that Shuttle work be consolidated under a single prime contract. But it cautioned that a competitive selection of the single prime contractor would have undesirable consequences:

"In addition, selecting a prime contractor from among the current contractors, as opposed to an open competition, could accomplish all of the objectives in a less disruptive and more expeditious manner, realizing potential cost reductions earlier." (Final Report, p. 2)

"A competition based on a NASA Request for Proposal would result in lost savings during the time required to conduct such a competition and possibly unacceptable disruption to the NASA flight schedule. To avoid these difficulties a prime contractor could be selected by the agency from the present contractors." (Final Report, p.19)

Various studies conducted independently by Rockwell and Lockheed Martin since 1991, both internally and at NASA's request, had similarly concluded that a competitive selection of a Shuttle prime contractor would be extremely disruptive to the workforce and had the potential to cause significant impacts to safety and schedule.

Origin of the United Space Alliance (USA) Concept

In March and April 1995, Rockwell, Lockheed Martin and other contractors participated, at NASA's request, on the Shuttle Program Restructure Committee. The committee produced several options to achieve Congressional, Administrative and NASA objectives to reduce Shuttle program costs in a safe and nondisruptive manner, including consolidation under a single Shuttle prime contractor.

The work of the Shuttle Program Restructure Committee involved a review of all of the Shuttle related contracts, with a view towards establishing a framework for defining the scope of a Shuttle prime contract. This exercise drove home a point that had surfaced in earlier evaluations: Rockwell and the newly formed Lockheed Martin had 83% of the Shuttle operations contract content that would be included in the scope of the Shuttle prime and 69% of the total Shuttle contractor content. Further, it became clear that the major opportunities for disruption and safety problems were also predominately in those contracts (most of the remaining contracts being support services to NASA).

The obvious synergy of a Rockwell/Lockheed Martin team was compelling for NASA. The Rockwell and Lockheed Martin team would minimize workforce disruption and safety problems because they already were performing the critical tasks. The team would maximize program savings because the whole transition to a Shuttle prime could be accomplished much more quickly than would otherwise be possible.

On the other hand, the parties also recognized that if NASA chose to conduct an open competition, it was unlikely that an integrated Rockwell/Lockheed Martin team would result if one or the other won the Shuttle prime role. Profit incentive would motivate the prime contractor to minimize subcontracted efforts. Since hardware elements will still have to be acquired from the established contractors, the consolidation effort would have to focus on the operations contracts at JSC (Rockwell) and KSC (Lockheed Martin). The winning contractor would likely absorb the other company's operations contracts, with resulting loss of key personnel, disruption and added risk.

United Space Alliance (USA) Is The Right Answer

Given NASA's Shuttle prime goals and challenges, we believe a Rockwell/Lockheed Martin joint venture is in the best interests of the Shuttle program, NASA, and the country. In fact, Kraft suggested such an approach in his report, but discounted it because he did not think that we would be able to form the joint venture in a timely fashion which we have done.

Competition for government contracts is designed to accomplish two goals:

- To elicit the best, most innovative approaches for accomplishing contract tasks
- To achieve lowest costs

The USA approach achieves these goals.

1. The approach is the most innovative, offering unique advantages that assure continued safe operations during transition while minimizing implementation risk because the USA team:
 - a. has a large pool of experienced personnel qualified to fulfill critical decision-making positions, allowing safe assumption of former NASA roles;
 - b. can easily transition the team members' existing contracts (which represent more than 80% of the effort) to be subcontracts, and preclude typical adversarial relationship between prime and subs;
 - c. defines roles and responsibilities up front as part of alliance and joint proposal development;
 - d. creates a relationship between vehicle processor and orbiter developer that minimizes risk in realigning orbiter processing accountability to developer (NASA requirement);
 - e. minimizes risks that would be created by diversion of key managers (both NASA and industry) from program tasks to competition tasks.
2. USA can achieve greater program savings for the government faster because:
 - a. the transition is simplified, thereby costing less and happening faster;

- b. USA's combined knowledge of end-to-end processes allows areas to be targeted for early cost reduction by eliminating overlap and duplication and by streamlining processes (e.g. rationalizing duplicative Shuttle repair capabilities).
- 3. USA minimizes start-up costs because:
 - a. existing USA team relationship simplifies subcontractor negotiations with Rockwell and Lockheed Martin elements;
 - b. USA team currently operates all necessary facilities, infrastructure, processes, tools, procedures, and databases; no learning curve; minimal transition costs;
 - c. NASA avoids up-front costs of a competitive procurement (e.g. bid and proposal preparation evaluation, negotiation).
- 4. The Space Flight Operations Contract (SFOC) solicitation approach is not a cost based "low bidder wins" type of competition. Under the SFOC solicitation approach, the savings occur after NASA awards the contract, based on the incentives and penalties built into the contract.
- 5. The SFOC solicitation approach states that evaluation will be based on "offeror's ability to manage technical and business change"
 - a. through team members' broad, combined knowledge/synergism, USA team can perform more content for the same cost;
 - b. USA's experience and knowledge of combined team promotes efficiencies while maintaining safety.

Mr. Chairman, we've given a great deal of thought to how we can manage the very complex Shuttle operations while achieving NASA's goals of maintaining safety and reducing program costs. We believe the Shuttle prime concept is a new way of doing business -- one that maximizes the talents and resources of both the government and private industry. USA is pleased to have the opportunity to manage the Shuttle program and mindful of the responsibilities inherent in that undertaking. We are confident we can maintain NASA's standards of safety while reducing the cost of operations.

Working with NASA and the Members of this Committee, we can ensure the safe, efficient and productive use of the world's most versatile launch system -- The Space Shuttle.

National Aeronautics and
Space Administration
Office of the Administrator
Washington, DC 20546-0001



NOV 7 1995

The Honorable F. James Sensenbrenner, Jr.
Chairman
Subcommittee on Space
Committee on Science,
Space and Technology
House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

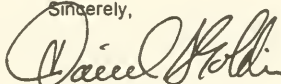
Enclosed for your information is a notification to Congress, pursuant to Title 10 U.S.C. 2304 (c) (7), of my determination that it is in the public interest to use procedures other than full and open competition to negotiate a single prime contract with the United Space Alliance, a joint venture to be comprised of Rockwell International Corporation and Lockheed Martin Corporation, to become the new Shuttle Flight Operations Contractor (SFOC) and assume responsibility for Space Shuttle operations.

This authorization is needed to ensure that NASA can restructure the Space Shuttle program to maintain safety, meet the flight manifest necessary to assemble the International Space Station on schedule, and achieve significant operational efficiencies to remain within NASA's declining budget, while maximizing the future commercial potential of the Space Station and the best use of the American taxpayer's dollars. As you know, NASA determined, pursuant to a study conducted by Dr. Christopher Kraft, former Director of Flight Operations during the Apollo era, to award a single prime contract to operate the Shuttle, thereby decreasing the number of civil servants necessary to run the program and reducing unnecessary and duplicative contractor activities.

Rockwell International and Lockheed Martin Corporation, which together hold nearly 70 percent of the dollar value of all Shuttle-related prime contracts, will form United Space Alliance to become the SFOC. NASA's reaching a contract with U.S. Alliance depends on three factors: first, the two companies must form a viable, separate legal entity capable of operating the Shuttle program; second, NASA and U.S. Alliance must negotiate a contractual arrangement which commits the contractor and provides appropriate incentives to maintain safety, meet the flight manifest and achieve program efficiencies; and third, the workforce which

U.S. Alliance applies to the SFOC must possess sufficient experience with Shuttle operations that additional time-consuming training is unnecessary to keep the program progressing safely and efficiently.

I believe this Determination and Findings provides a vital tool in our progress in reinventing NASA, and I would be pleased to discuss it with you personally, if you wish.

Sincerely,

Daniel S. Goldin
Administrator

cc:
The Honorable Ralph M. Hall

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
WASHINGTON, D. C. 20546

DETERMINATION AND FINDINGS

AUTHORITY TO USE OTHER THAN FULL AND OPEN COMPETITION

Upon the basis of the following findings and determination, which I hereby make pursuant to the authority of 10 U.S.C. 2304(c)(7), as implemented by Subsection 6.302-7 of the Federal Acquisition Regulation, it is in the public interest to use other than full and open competition in the contract action described below.

FINDINGS

1. The United States initiated the Space Station Program in 1984 to provide for permanent human presence in an orbiting laboratory. From the outset, the program was international in scope and participation. While the U. S. would contribute most of the hardware necessary to make the Space Station function as an orbiting laboratory, Canada, Japan, and the member nations of the European Space Agency all agreed to contribute major elements to the Space Station to expand its capabilities and uses. Since its initiation, Russia has joined this international partnership and will contribute valuable hardware, technology, and operational capabilities to the International Space Station (ISS). Currently, the Governments of fourteen other countries have signed the Inter-Governmental Agreement committing to the ISS program. As such, the ISS represents a truly international undertaking of historic importance and technological significance.
2. In March of 1993, the Clinton Administration announced its continued support for the ISS, but directed the National Aeronautics and Space Administration (NASA) to reduce development, operations, and utilization costs while achieving many of the program's goals for long duration scientific research. NASA responded by dramatically restructuring the program and awarding a single prime contract to Boeing Defense and Space Group to assume overall responsibility to manage and integrate the ISS according to a specific, success-oriented schedule. Congress has, in turn, responded positively to the Administration's initiatives by taking the unusual step of proposing a multi-year authorization bill to provide stable funding for the program and to assist in making the ISS a reality by the year 2002.
3. The ISS is truly international in scope and bipartisan in support. NASA must, however, meet its commitments to our international partners, the Congress, and the Administration, at a time when the Federal budget, in general, and the NASA budget, in particular, is declining dramatically. As the Country's sole space transportation system for humans, the Space Shuttle is pivotal to making the ISS a success. Moreover, the Shuttle is the single largest cost element in NASA's budget. As such, NASA's declining budget impacts the Shuttle heavily. The Shuttle must continue to operate safely and efficiently for NASA to succeed in assembling the ISS by the year 2002, as we have promised. In addition to safety and effectiveness, the Shuttle must also

find ways to operate at significantly lower cost to stay within the declining budget. NASA must, therefore, find ways to restructure the Shuttle program to maintain safety, meet the flight manifest necessary to assemble the ISS on schedule, and achieve significant operational efficiencies. An added benefit of this approach is that it will facilitate the ultimate transition to a single space operations contractor under the auspices of the Space Station, after assembly of the ISS is complete.

4. At NASA's request, Dr. Christopher Kraft, former Director of Flight Operations during the Apollo era, studied the Shuttle program to determine what NASA could do to improve efficiency and reduce cost, while maintaining safety and meeting the flight manifest. As a result of this study, Dr. Kraft recommended that NASA explore awarding a single prime contract to operate the Shuttle, thereby, decreasing the number of civil servants necessary to run the program and reducing unnecessary and duplicative contractor activities. If NASA could consolidate the multiple contracts into a single Statement of Work, eliminating duplicative or unnecessary work in the process, the resulting contract should be greatly streamlined and less costly. Yet, if the Statement of Work still addresses what is crucial to safety and efficiency, Shuttle operations should not suffer. To ensure that all this happens, Dr. Kraft has recommended that NASA award a single prime contract for all operations, which contract provides appropriate incentives to maintain safety, reduce costs, and improve efficiency. NASA calls this approach the "Shuttle Flight Operations Contractor" (SFOC) and has assembled a source evaluation board to draft the necessary Statement of Work and solicitation document to select a single operating contractor. Awarding a single prime contract to the SFOC should reduce Shuttle program costs in two ways. First, the contract will provide incentives to cut out unnecessary or duplicative work. The SFOC will still perform all necessary work for safe and reliable Shuttle operations. But, the SFOC will only perform that work once and at the lowest reasonable cost. Second, because NASA will no longer be heavily involved in the management of day-to-day Shuttle operations, fewer civil servants would be required to manage the program.

5. NASA has committed to the Administration, the Congress, and our international partners to have the ISS operational by the year 2002. To achieve this commitment, NASA must accomplish a number of important tasks in a very tight timeframe, leaving little time for a new contractor to become familiar with the Shuttle program. The first, and perhaps most critical, task in this schedule requires the Shuttle to conduct the First Element Launch (FEL) of the ISS early in Fiscal Year (FY) 1998. In preparation for FEL, the Shuttle must accomplish major milestones which begin as early as January 1996. These milestones cover a full range of interrelated science and training missions, including six flights to the Russian space station, MIR. Three of the MIR missions will occur in FY 1996, with the remainder taking place in FY 1997.

6. As currently planned, a competitive contract award by September of 1996 would require a new contractor to learn the Shuttle program while critical milestones in preparing for FEL would be occurring. Once selection has occurred, only the current contractors would have the necessary experience base and existing operational structures to meet FEL without significant

additional risk. A new contractor would have great difficulty taking over total responsibility for operating the Shuttle without incurring an unacceptable level of safety and programmatic risk.

7. Competition to become the SFOC has some very positive aspects. The process should drive costs down and incentivize the proposers to identify the best technical and managerial approaches to an enormous contractual undertaking. On the other hand, competition also has significant negative aspects, namely, it could occasion the loss of knowledgeable personnel, introduce added risk to the Shuttle program, and seriously impair NASA's ability to meet the ISS schedule. Of the existing Shuttle-related prime contracts, some 20 are of crucial importance to safe, reliable operations. Whether or not NASA pursues competition, the procurement must consolidate these 20 prime contracts and make the SFOC responsible for managing the combined efforts in a safe, timely, and efficient manner. To maintain a competitive environment, NASA would have to approach all 20 prime contractors and attempt to negotiate the right to transfer to the SFOC some or all of the work covered. If one or more of these prime contractors refused to grant the right of transfer to the SFOC, NASA's only leverage would be to terminate the contracts for convenience. Even if NASA's negotiations ultimately proved successful, they would require complex, labor-intensive effort at the same time the agency would be evaluating competitive proposals from prospective contractors to become the SFOC, itself. Moreover, the length of time required to complete these negotiations, as well as their substance, could threaten the integrity of the SFOC procurement which would depend, in large part, on their outcome.

8. The SFOC contract will be awarded by FY 1997 leaving only one year of transition before the contractor must be ready for FEL early in FY 1998, as well as complex tasks of planning and executing all subsequent ISS assembly flights. This means that a contractor other than the current incumbents will have had only the minimal, essential experience before undertaking operation of the Shuttle on a series of highly complex and difficult ISS assembly flights which have never been attempted before. As a result, the new SFOC will have to learn a great deal about the technical and administrative aspects of Shuttle operations in a very short time period and under extremely demanding circumstances. In fact, major, critical milestones leading up to FEL will begin in January of 1996. To be fully prepared, the new SFOC should participate in these major milestones and early missions as soon as possible. This participation will facilitate learning and shorten the length of transition from the current program to a contractor-run Shuttle operation. However, participation before the procurement process is complete is inconsistent with full and open competition. Because of the amount to learn and the shortness of time, the risks to the Shuttle program and to the ISS assembly schedule are, obviously, much greater with a new SFOC than with the current group of experienced contractors working with equally experienced and skilled NASA civil servants. Even more importantly, inadequate transition time could threaten the safety of the orbiter and crew. Making matters worse, while gaining this vital technical knowledge and experience, the new SFOC would have to negotiate extensively with numerous new, directed subcontractors to obtain the necessary efficiencies to stay within the declining Shuttle budget. It is, at best, unclear that the likely benefits from competition can justify accepting these substantial risks to the Shuttle and ISS programs, both of which involve the safety of the humans who must fly the orbiter and assemble station.

9. Currently, two companies, Rockwell International Corporation and Lockheed Martin Corporation, hold approximately 69 percent of the dollar value of all Shuttle-related prime contracts. Moreover, these two companies have expressed the intent to form a joint venture called, "United Space Alliance" (U. S. Alliance) for the purpose of submitting a proposal to become the SFOC. A non-competitive contract with U. S. Alliance could be highly beneficial to the Shuttle program and, therefore, in the public interest, if three conditions are met. First, Rockwell International Corporation and Lockheed Martin Corporation must form a viable, separate legal entity capable of performing the SFOC contract. More specifically, U. S. Alliance must not only have a separate legal existence with authority to commit the joint venture contractually, Rockwell International Corporation and Lockheed Martin Corporation must provide this new entity sufficient personnel and other resources to make it capable of performing the SFOC contract. Second, NASA and U. S. Alliance must negotiate a contractual arrangement which commits the contractor and provides appropriate incentives to maintain safety, meet the flight manifest, and achieve program efficiencies. Third, the reduced workforce which U. S. Alliance applies to the SFOC effort must possess sufficient experience with Shuttle operations that additional, time-consuming training is unnecessary to keep the program progressing safely and efficiently.

10. A non-competitive contract award to U. S. Alliance would eliminate the need to maintain a competitive environment, ensure an experienced workforce is available to meet the FEL milestones, and reduce the time and complexity required to reach a binding contract that can allow performance to begin. The fact that U. S. Alliance would already hold 69 percent of the value of the Shuttle-related prime contracts would greatly simplify the task of consolidating the existing separate contracts under the SFOC. For these prime contracts, NASA would not have to negotiate the right to transfer the effort to the SFOC. Rather, the SFOC contract could simply hold U. S. Alliance responsible for restructuring these prime contracts to maintain safety, meet the flight manifest, and achieve program efficiencies. To ensure this happens in a way that both saves money and keeps the program robust, NASA would intend to negotiate appropriate incentives into the SFOC contract to cut unnecessary or duplicative work and facilities. For the remaining contracts, NASA could negotiate the right to transfer the effort to the SFOC, allow the contract to run to completion, or terminate the effort for the Government's convenience.

11. In sum, U. S. Alliance has the broad experience base necessary to undertake responsibility for Shuttle operations at the most demanding period in the system's history. As NASA embarks on the ISS assembly, there is no time or money for a new contractor to learn the intricacies of the Shuttle as a launch system. A one-year slip in the ISS assembly schedule, which could reasonably result should the SFOC transition not occur smoothly, could cost the American taxpayers over \$2 Billion. To minimize the risk of any such costly slippage, the SFOC needs to participate in the MIR training missions and other learning experiences critical to the ISS assembly. If NASA must select the SFOC through competitive procedures, the contractor would likely miss this critical participation.

12. Under all the circumstances, the advantages of contracting directly with U. S. Alliance clearly outweigh any benefits from competition. Nevertheless, NASA needs to be a smart buyer in a procurement of this magnitude and importance. The maximum benefit from a non-competitive award to U. S. Alliance lies in maintaining a skilled and knowledgeable contractor workforce which will minimize schedule risk for FEL. To this end, NASA and U. S. Alliance should accomplish the following tasks in the sequence indicated:

a. Both parties must agree on a detailed Statement of Work which adequately describes what the SFOC must do in performance terms. This Statement of Work will define the outcomes NASA expects, but will not dictate specific steps to achieve these objectives.

b. U. S. Alliance must prepare definitive technical and cost proposals which are responsive to the Statement of Work. These proposals must contain specific plans and commitments to reduce contract requirements, facilities, and workforce.

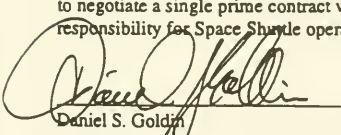
c. NASA must evaluate these proposals and capture their strengths and eliminate their weaknesses in an agreed-upon contractual document. This single document must incorporate all of U. S. Alliance's obligations and provide appropriate incentives to ensure the SFOC contract maintains safety, meets the flight manifest, achieves program efficiencies, and is positioned for efficient transition into a unified space operations contract after the ISS assembly is complete.

d. The parties must develop a phased contractual arrangement which commits U. S. Alliance to an initial effort to identify program efficiencies from within its current prime contracts. This arrangement must also provide clear milestones to reach a final, definitive agreement on all aspects of the Shuttle operations as soon as possible, given the obvious complexity of the negotiations.

This four-step approach should allow NASA to bring efficiencies into the Shuttle program without degrading safety or our ability to meet the flight manifest necessary to fulfill our international commitments to the ISS.

DETERMINATION

Based on the foregoing findings, and pursuant to 10 U.S.C. 2304(c)(7), I hereby determine, as Administrator of NASA, that it is in the public interest to use other than full and open competition to negotiate a single prime contract with U. S. Alliance to become the new SFOC and assume responsibility for Space Shuttle operations.



Daniel S. Goldin
Administrator

November 7, 1995
Date

Responses to written questions submitted by Chrm. Sensenbrenner resulting from the November 30, 1995, hearing.

QUESTION 1:

You stated that the first time you received notice of the joint venture "United Space Alliance" was on July 27, 1995. The formation of the United Space Alliance (USA) was announced to congress later, in a press release, on August 2, 1995. In what form was NASA informed of the alliance on July 27, 1995? Please provide a copy of the July 27, 1995 notification for our record.

ANSWER 1:

Rockwell and Lockheed-Martin provided NASA with a paper entitled "agreement in principle" between Rockwell international corporation and Lockheed Martin corporation to form a joint venture partnership. A copy of the paper is provided as attachment #1.

QUESTION 2a:

During the hearing, you discussed NASA's perceived leverage with USA. You said that NASA had the leverage of breaking off negotiations with USA at any point if USA was unable to meet NASA's expectations. If NASA did break off its negotiations with USA, with whom would NASA then negotiate?

ANSWER 2a:

If NASA were to break off negotiations with US Alliance there are several possible alternative courses of action. Selection of the approach to be used would be based on an analysis of the circumstances present at the time and a determination as to the course of action considered most beneficial to the government. Potentially, a combination of more than one approach could be used, with short term actions employed initially, transitioning to longer term actions when the opportunity for their effective implementation became available.

NASA could decide to temporarily postpone negotiation of an SFOC contract until after the accomplishment of critical launch activities in support of the space station. Such delay could possibly enable use of a competitive approach to entering an SFOC contract, since critical space station launches were key considerations in the decision to seek sole source negotiations with US Alliance.

NASA could seek to negotiate consolidated contract efforts in increments smaller than the current configuration of the SFOC contract, but larger than existing individual contracts, by bundling together individual contracts with similar characteristics (by contractor, by geographical area, by type of work, etc). This too could be pursued as either a short or long term effort.

NASA could negotiate separate contracts with Rockwell and Lockheed-Martin, parent companies of US Alliance, capturing within each the broadest possible scope of work reflective of space shuttle contracts currently held by those companies.

QUESTION 2b:

Would NASA then be put at a disadvantage to negotiate or re-negotiate contracts with Lockheed-Martin or Rockwell, if it "walked away" from negotiations with USA? Would NASA's "fall back" negotiating position mean simply contracting with the same firms? What would Lockheed-Martin or Rockwell "lose" if USA failed to negotiate with NASA?

ANSWER 2b:

It is fully NASA's intent to seek a successful negotiation with US Alliance and to thereby achieve maximum program economies while ensuring shuttle safety and adherence to the program manifest.

It is NASA's firm belief that a determination to break off negotiations with US Alliance would not place NASA at a disadvantage in any subsequent negotiations with Lockheed-Martin or Rockwell.

QUESTION 3:

When the USA contract is ultimately signed, how does USA maintain the schedule for consolidation of the first 28 existing contracts? What is the timetable, and what consequences fall upon either NASA (i.e., The shuttle manifest) or USA if the contracts are not willingly consolidated according to the timetable?

ANSWER 3:

Attachment #2 is the breakout of Phase 1, Phase 2, and Phase 3 contracts. This breakout identifies the contracts currently contemplated for consolidation into the SFOC, the timing of that incorporation, and other pertinent data unique to each contract. As can be seen from this attachment, activities to consolidate contracts have been planned with existing contract performance periods, option exercise opportunities, and other appropriate points of opportunity taken into consideration in order to facilitate their consolidation. However, for some sub-contracts, meeting the schedule is contingent upon an agreement with the sub.

The SFOC solicitation provides US Alliance with great flexibility in developing the approach they would intend to use to consolidate contracts. NASA does not require that the existing contracts be subsumed into US Alliance, but allows for subcontract or other relationships to be structured by US Alliance in its approach. The solicitation gives US Alliance the flexibility

to propose to NASA its own approach to accomplishing these consolidation activities while keeping the cost to the government at a minimum. For its part, NASA will strive to meet this schedule consistent with NASA's overriding concern of program safety.

NASA is fully prepared to alter the schedule as necessary, slowing it should there be any question with regard to program safety.

The phased approach allows NASA and US Alliance considerable latitude in the consolidation timetable. The solicitation contemplates SFOC contractor performance prior to and throughout the consolidation of the Phase 2 and Phase 3 contracts. This timetable could be extended as necessary to ensure program safety and schedule requirements are met and to ensure that a smooth transition occurs.

The most likely consequence of failure to maintain the planned schedule for consolidation is lost or delayed cost savings opportunities. While NASA desires to maximize the opportunity for such savings, it will not sacrifice program safety in order to do so.

QUESTION 4:

What does NASA intend to do by itself, or through its ultimate agreement with USA, to ensure that a viable open competition can later take place, when USA's first contract term expires?

ANSWER 4:

NASA has structured a solicitation which clearly contemplates eventual viable open competition to take place at the conclusion of the SFOC performance period. Specific solicitation provisions to this end include:

The contracting approach has NASA provide selected installation provided property and services to the SFOC contractor. These services were selected after extensive analysis in order to achieve maximum program economies and in order to ensure that future SFOC competition is possible. Similarly, property acquired by the SFOC contractor at government expense during performance of the SFOC contract shall be retained as government property (enabling its transfer to a successor contractor) in order to ensure that an opportunity for future competition is maintained.

NASA has placed specific requirements on the SFOC contractor with regard to the characteristics of the employee pension plan to be utilized, in order to enhance employee flexibility and resultant opportunities for competition. Characteristics with respect to employee vesting and the type of plan utilized will facilitate competitive opportunity by allowing employees maximum freedom to move to successor companies without loss of benefits.

The solicitation establishes requirements for the use of commercial off the shelf information systems and software programs, again to facilitate future competition. Coupled with these requirements are specific opportunities for NASA access to the data and information provided by such systems to ensure full insight into contractor operations and performance. This level of NASA understanding should further facilitate the preparation of future competitive SFOC solicitations and result in increased opportunities for competition.

The SFOC solicitation contains a special reprourement data package requirement intended to ensure that data and information produced in performance of the contract is maintained in a manner suitable for inclusion in future competitive solicitations for the SFOC. This provision should ensure that the cost of such reprourement data packages, by being planned for and accomplished as a part of normal day-to-day contract performance, does not prove prohibitively expensive at the time a future competition is contemplated.

The solicitation requires the SFOC contractor, in their proposal, to specifically address how potential costs to close out the SFOC contract will be minimized in order to enhance the opportunity for unimpeded future competition.

QUESTION 5:

What does NASA intend to do by itself, or through its ultimate agreement with USA, to ensure that a viable open competition can later take place to perform space station operations under a separate, openly competed contract?

ANSWER 5:

SFOC will do some space station operations (mission operations, training, EVA, etc). However, most space station operations--sustaining engineering, payloads, logistics, etc.-- will be competed.

QUESTION 6:

In the event the federal trade commission does not approve either the USA joint venture or NASA's decision to sole-source the SFOC, what will NASA do? Please provide a schedule and milestones for proceeding in this event, preferably against the schedule and milestones planned for under the determination and findings.

ANSWER 6:

This question has been overtaken by events. The federal trade commission has completed its review of US Alliance and has not taken issue with its establishment.

QUESTION 7:

For those activities that are included in the proposed contract, what analysis has been performed to reach the conclusion that only the shuttle operations contractor can or should perform those activities? Please be specific.

Is it NASA's intention that the space shuttle operations contractor will perform those activities through the completion of the space station program, or the space shuttle program, whichever comes first, or will other companies have an opportunity to compete in the future? If United Space Alliance (the Rockwell Lockheed Martin joint venture) is being chosen today because it is the only group capable of providing these services in a safe, timely manner, what actions will NASA take to ensure a larger competitive pool in the future?

ANSWER 7:

The determination of which activities should be performed by the SFOC contractor was made only after an exhaustive EVA evaluation of existing space shuttle contracts. Provided as an attachment to this paper is a summary of that EVA evaluation and the determinations which resulted.

The SFOC solicitation contemplates a 6 year base performance period followed by two 2 year options, which may be exercised at NASA's discretion. At the conclusion of this performance period, which will total 10 years at most, a competitive repurchase is planned.

The circumstances which led NASA to determine that only US Alliance could currently meet our requirements was based upon unique aspects of our current situation, particularly the upcoming initiation of flight support for construction of the space station. Because of the limited time available before the initiation of these assembly flights, it was recognized a competitive contract award by September 1996 would require a new contractor to learn the shuttle program while critical milestones in preparing for first element launch would be occurring. Furthermore, once selection occurred, only the current contractors would have the necessary experience base and operational structures to meet first element launch without significant additional risk. A new contractor would have great difficulty taking over total responsibility for operating the shuttle without incurring an unacceptable level of safety and programmatic risk. It was determined appropriate, in the public interest, to use other than full and open competition in support of the SFOC contract award.

It is anticipated that the circumstances which will face the agency at the completion of the performance period for the SFOC contract will be substantially different than those currently facing the program. At the present time, NASA has every intention of accomplishing the selection of the subsequent SFOC contractor through full and open competition.

QUESTION 8:

For those activities that are not included in the proposed contract, is there any language in the contract that would preclude or negatively affect a private sector contractor other than United Space Alliance from successfully bidding to provide those services? What actions will NASA take to assure that a competitive pool of applicants is available to bid on these activities?

ANSWER 8:

There is no language intended for inclusion in the SFOC contract which would preclude or negatively affect a private sector contractor other than United Space Alliance from successfully bidding to provide services for activities not included in the SFOC contract. As pointed out in response to question #4 above, on even the SFOC contract itself where the current environment has precluded a full and open competition, the SFOC solicitation contemplates contract performance which will enhance the opportunity for SFOC competition in the future. NASA is firmly committed to and fully supports opportunities for full and open competition wherever possible.

US Alliance has indicated its intention to perform as a joint venture for the sole purpose of performance on the SFOC contract; as such US Alliance would not be placed in competition with any other private sector contractor for work outside the SFOC contract.

The SFOC solicitation reflects this sole purpose intent through a special limitation on the allowability of bid and proposal expense. This special limitation would make bid and proposal expenses unallowable for proposals other than for the SFOC contract.

QUESTION 9:

The space shuttle is the only U.S. launch vehicle planned for use in carrying cargo and crews to the space station during its construction period. However, there is no reason expendable launch vehicles (ELVs) or new reusable launch vehicles (RLVs) could not be used during the operational period (2002-2012). Russian, European, and perhaps Japanese ELVs are already planned for use.

Does the proposed contract preclude the use of other U.S. launch vehicles for station operations? Is language included clarifying that any reference to space station operations is included only to the extent that the space shuttle is used for station operations? Or does the contract imply, explicitly or implicitly, that there is an expectation that the shuttle will be the only U.S. launch vehicle used during the operational phase?

ANSWER 9:

There is nothing in the SFOC solicitation which would preclude the use of other U.S. launch vehicles for station operations.

The SFOC solicitation statement of work states, in Section 1.7 which is the portion of the statement of work relevant to station activities, that the SFOC contractor shall support NASA managed tasks in accordance with the annual shuttle and ISSP operating plan. This document addresses only the shuttle and station activities as interrelated, it does not address alternative launch systems.

It is NASA's belief that there is no implication, explicit or implicit, that the shuttle will be the only us launch vehicle used during the operational phase. The SFOC contract only pertains to the use of the shuttle.

QUESTION 10:

Space station operations costs have been controversial both in terms of estimating what those costs will be, and how to allocate them among the partners. A strict accounting of "space station" versus "space shuttle" operating costs will be essential - both in terms of assuring that each partner pays a fair share, and, within the NASA budget, ensuring that space station does not eat into the space shuttle account.

How will the contract costs be accounted for to make certain that space shuttle and space station costs are separately identified and appropriately allocated to those programs?

ANSWER 10:

The SFOC solicitation contains a clause, H-29 "requirement for cost tracking" which establishes a contractual requirement for such cost tracking.

Clause H-29 states: "costs for the space shuttle and ISS shall be tracked and reported separately in order to comply with requirements that accurate and timely reporting of ISS costs to the congress can be accomplished by NASA. These costs, to be reported in accordance with the requirements of 1852.242-73, NASA contractor financial management reporting, and 1852.242-74, NASA contractor financial management reporting

(performance analysis report), must be in suitable format and adequate detail to fulfill obligations placed on NASA."

QUESTION 11:

There is always concern about adequate communications between different parties, particularly when they are so closely involved in one project. How would the shuttle operations contractor communicate with whatever entity operates the space station? Would the shuttle operations contractor have primary responsibility for its station operations activities or would the shuttle contractor act as a subcontractor to the space station operator? In terms of NASA's responsibility, is it the agency's intention to have a single program office responsible for oversight/insight of both space shuttle and space station operations?

ANSWER 11:

Currently, there is no plan for a single program office to manage shuttle and station. Current thinking is that such a consolidation is not needed prior to assembly complete.

Section 1.7 of the SFOC statement of work addresses the relationship between the SFOC contractor and the space station program. As discussed earlier, the nature of that relationship is essentially one in which the space station is just another customer for whom space shuttle flight support is being provided, albeit a customer with whom the complexity and duration of interaction will be at an unprecedented level. The statement of work does address in detail the nature of the communications and the relationship between SFOC and station activities in order to ensure that this interaction between programs can be accomplished effectively.

The SFOC statement of work in Section 1.7 requires the SFOC contractor to participate, in a number of different forums, in communications and planning activities designed to ensure effective planning, communication, integration and coordination between space shuttle and space station. For example, the SFOC contractor will serve on the integrated product team responsible for logistics and maintenance support functions for space station. This involvement will ensure that essential information from the space shuttle (for example: capacity, flight capabilities, special flight requirements, etc.) is available to and appropriately considered by the space station in the development of a logistics and maintenance approach.

QUESTION 12:

This committee supports the idea that space shuttle and space station operations eventually should be privatized. How would having the shuttle operations contractor responsible for some station operations affect NASA's ability to eventually privatize space station operations?

ANSWER 12:

The relationship between the SFOC contractor and the space station operations contractor was addressed in detail in question #11 above. The SFOC contract is not intended to accomplish station operations. The SFOC contractor is responsible for supporting the space station and its operations contractor by providing transportation services. While the nature of these transportation services will require significant interaction between the those services provided by the SFOC contractor are intended by NASA to be independent of the identity of the space station operations contractor. To our knowledge, there should be no impact by SFOC contractor performance on the selection of a contractor to perform space station operations.

AGREEMENT IN PRINCIPLE
between
Rockwell International Corporation
and
Lockheed Martin Corporation
to form
A Joint Venture Partnership
July 27, 1995

AGREEMENT IN PRINCIPLE

July 27, 1995

Rockwell International Corporation and Lockheed Martin Corporation hereby agree in principle to form a joint venture to offer to NASA a single prime contractor relationship for the United States Space Shuttle Program. The tentative name of the venture is United Space Alliance (USA).

I Charter

USA will be the single prime integrating contractor for the space shuttle program. As such it will restructure and implement ongoing management of the shuttle program to achieve substantial cost reductions while maintaining safety of flight. The USA joint venture, subject to NASA's concurrence, will be the only contracting entity through which RIC or LMC will satisfy NASA's requirement for a single shuttle prime.

II. Joint Venture

USA will be a 50/50 joint venture partnership, equally sharing fees and distributions. Both parent companies will share equally in any potential termination liability risk carried by the JV. As an integrating contractor, it is intended that USA will maintain an employee base necessary to contract with and oversee shuttle program subcontractors. The joint venture will contract with the NASA, RIC, LMC and others directly and independently. Its employees will act on behalf of USA ("purple suited").

III Joint Venture Management

The USA President and CEO will be appointed by Rockwell International Corporation. The CEO is authorized to act on behalf of the partnership on all matters not specifically limited by the JV agreement. Administrative support will be drawn from RIC and a special G&A rate not to exceed 1% will be applied by Rockwell. Administrative support from LMC may also be provided at the CEO's discretion but the total will not exceed 1%. The USA Executive Vice President and COO will be appointed by Lockheed Martin Corporation. Each of the parties reserves the right to veto the CEO and COO appointees at the time of appointment. The USA CFO will be appointed by Rockwell International Corporation. The USA Comptroller will be appointed by Lockheed Martin Corporation. The remainder of the management team will be a balance of Rockwell International Corporation and Lockheed Martin Corporation people, augmented by selected outside hires, with final decision by the CEO.

Advising the joint venture will be a seven member Advisory Board made up of three mutually agreed upon non-employees of either Rockwell International or Lockheed Martin, and two appointed from each Corporation. This Board will meet monthly during the formative period of the joint venture and quarterly thereafter to review progress of the venture. It will assure that appropriate emphasis is being placed on safety of flight and cost reduction initiatives. It will also review the balance of work assigned by the JV to RIC and LMC. This Board will have the authority to remove the President and CEO or the EVP and COO if needed, and this is the sole legal authority of the Advisory Board.

IV. Scope of Work

It is the intent that USA will propose to contract with NASA for all current and future STS contracts. The initial USA contract with NASA will be proposed as a cost plus incentive fee contract, with fee based upon cost reduction and with special incentives related to performance and mission success. Subcontracts will be similarly restructured. The USA joint venture will respect and continue RJC and LMC's traditional roles on the current shuttle program. In any event, USA must be responsive to NASA direction regarding the shuttle program.

Formation of the JV is based upon the following presumed actions by NASA:

Overall shuttle operations will be consolidated under a prime contract awarded to the JV including responsibility for all certified hardware and software, all launch and ground operations, and all mission and flight operations. Certain R&D efforts may be added as well as space station training and mission planning.

NASA will minimize Civil Service oversight involvement in above effort and will focus their resources on R&D activity.

NASA will work with the JV and the Congress to satisfactorily resolve PTL coverage for the prime contract.

V. Headquarters

The headquarters of the JV will be at a location determined by NASA for the NASA Shuttle Program Management Office. Some JV employees will be at other locations.

VI. Term

It is the intent that this agreement and USA remain in effect for the life of the shuttle program.

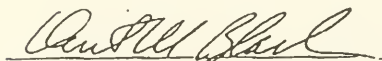
VII. Formal Agreement

Both parties agree to negotiate in good faith to conclude a formal USA joint venture partnership agreement, within 60 days, which embodies the principles herein.

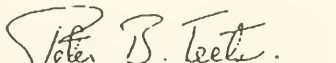
- VIII. It is the parties intent to comply with the laws and regulations of the United States, and if it is determined by either party that this agreement does not comply, then this agreement may be terminated.

For ROCKWELL INTERNATIONAL CORPORATION

For LOCKHEED MARTIN CORPORATION



Kent M. Black
Executive Vice President and COO
Rockwell International Corporation



Peter B. Teets
President and COO
Lockheed Martin Information and
Technology Services Sector



PHASED APPROACH

- CONTRACT VALUES FOR PHASING
 - VALUES ARE APPROXIMATE
 - VALUES ARE BASED ON BUDGET PROFILE FOR FY97 THRU FY01
 - VALUES DO NOT INCLUDE CIVIL SERVICE, BUDGET RESERVES, ETC.
 - PHASE I : \$ 6,046M + FACILITY CONTRACTS
 - ALL LOCKHEED-MARTIN AND ROCKWELL CONTRACTS EXCEPT DEVELOPMENT CONTRACTS
 - NEW WORK TO MAKE ELEMENT PROVIDERS ACCOUNTABLE FOR THEIR HARDWARE/SOFTWARE
 - PHASE II : \$ 1,213M + FACILITY CONTRACTS
 - ALL REMAINING CONTRACTS EXCEPT DEVELOPMENT CONTRACTS AND NASA HELD CONTRACTS
 - PHASE III: \$ 5,147M (\$ 2,384M WITHOUT DEVELOPMENT)+ FACILITY CONTRACTS
 - ALL REMAINING PRODUCTION CONTRACTS AT END OF DEVELOPMENT
 - TOTAL VALUE OF CONTRACTS NOT IN THE SFOC: \$2,485M
 - NASA HELD CONTRACTS



PHASED APPROACH

•	PHASE I : \$ 6,046 M + FACILITY CONTRACTS	
-	NAS9-14000	ROCKWELL/ORBITER PRODUCTION 368
-	NAS9-19000	ROCKWELL/SHUTTLE CONSOLIDATE 929
-	NAS9-18994	MARTIN MARJETTA/PICs 2
-	NAS9-18000	ROCKWELL SPACE OPERATIONS 1881
		CONTRACT/MOD
-	NAS9-13300	ROCKWELL/PALMDALE FACILITY
-	NAS7-300F	ROCKWELL/PALMDALE
-	NAS9-13350	ROCKWELL/FACILITY ACQ.
-	NAS9-16503	ROCKWELL/ FACILITY
-	NAS9-13662	ROCKWELL/FACILITY USE
-	NAS10-10900	LOCKHEED/SHUTTLE PROCESSING
		CONTRACT 2168
-	NAS10-12200	ROCKWELL/LOGISTICS <u>698</u>
		6046



PHASED APPROACH

• PHASE II: \$1,213M + FACILITY CONTRACTS		
- NAS9-17540	BOEING/FEPC	193
- NAS9-18194	BOEING/FEPC FACILITY	
- NAS9-19206	HAMILTON STANDARD/WASTE SYSTEM	10
- NAS9-18576	LORAL/PCASS SUPPORT	9
- NAS9-18983	LORAL/DPS/SID MAINT.	23
- NAS9-18800	JOHNSON ENG./M&O	172
- NAS8-36300	USBI/SRB	805
- NAS8-32233	USBI/FACILITY	
- NAS10-12000	EG&G/DELUGE&CRAWLERWAY	<u>2</u>
		1213



PHASED APPROACH

•	PHASE III: \$5,147M (\$2,384M WITHOUT DEVELOPMENT)+ FACILITY CONTRACTS	
-	NAS9-18817	LORAL/FLIGHT SOFTWARE 167
-	NAS8-40000	ROCKETDYNE/SSME 1064
-	NAS13-614	ROCKETDYNE/ SSME TESTING 82
-	NAS8-36200	MARTIN MARJETTA/ET 1685
-	NAS8-38100	THIOKOL/RSRM 2072
-	NAS8-39236	ROCKETDYNE/FACILITY
-	NAS8-39243	MARTIN MARJETTA/FACILITY 78
-	NAS8-38680	THIOKOL/FACILITY
		5147



Responses to written questions submitted by Cong. Hall resulting from the November 30, 1995, hearing.

QUESTION 1:

There are currently some twenty major shuttle operations contracts. Will those contracts be novated when the single prime is established, and will the government be liable for termination costs? If so, what is the magnitude of the termination costs?

ANSWER 1:

At the present time NASA does not intend to terminate any contracts, regardless of the mode of their eventual absorption into the SFOC contract (for example as either a novation or subcontract). NASA intends to accomplish whatever contractual action is eventually agreed to in negotiations at the end of contract performance periods or at the beginning of an option period of the existing contracts such that no terminations are necessary.

QUESTION 2:

Will the government or the prime contractor be responsible for determining which shuttle facilities will be consolidated or eliminated?

ANSWER 2:

The SFOC contract makes the contractor responsible for acquisition of facility projects of less than \$200,000 dollars. Above that dollar amount the prime contractor will be responsible for making recommendations to the government for consolidation or elimination of shuttle facilities. It will be the government's responsibility to determine which of these recommendations are acted upon.

QUESTION 3:

The National Space Transportation Policy states that no decisions will be made on upgrading the shuttle for continued operation past 2012 until the year 2000. How will you ensure that facilities and capabilities required to support a future upgrading of the shuttle will be preserved under the prime contract arrangement?

ANSWER 3:

For several years, budget trades have eroded NASA's capability for major upgrades. There is no plan to maintain facilities, workforce or capabilities solely for the purpose of protecting the option for major upgrades after FY 2000. However, significant capabilities do exist in the form of critical skills,

tooling, facilities, etc. In order to carry out today's low level of upgrades, and these would provide the nucleus for any required buildup after the FY 2000 decision point.

QUESTION 4:

Was a dual prime contract arrangement ever considered as an alternative to the single prime contract approach chosen by NASA? If so, why was it rejected?

ANSWER 4:

Yes, the Kraft committee included this concept as an option, but considered it less than optimal in that it offered fewer opportunities for center to center consolidations (savings).



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